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A JUDICIAL COURSE THAT CALLS FOR INTROSPECTION

Why in news?

⮫ Recently, the Supreme Court ordered the release of AG Perarivalan, a convict in the Rajiv Gandhi assassination case, in exercise of the constitutional power under Article 142.

⮫ This decision has stirred up a hornet's nest for its constitutional righteousness and establishing its supremacy as the final arbiter of enforcing constitutional discipline.

⮫ The decision has been hailed by some major political parties as a blow for federalism.

Whether Grant of remission by Supreme Court is constitutional or not?

⮫ The Court has treaded the extraordinary constitutional route under Article 142. The power to do 'complete justice', for grant of remission and consequent premature release.

⮫ The Bench decided to exercise the power of grant of pardon, remission et al., exclusively conferred on the President of India and State Governors under Articles 72 and 161.

⮫ Setting aside separation of powers viz. Parliament/ Legislature, Executive and Judiciary, whether the course adopted by the Bench to do expedient justice is constitutional calls for introspection.

⮫ The focus is only to evaluate the constitutionality of the decision in the context of Article 142.

Governor's power under Article 161:

⮫ The power under Article 161 is exercisable in relation to matters to which the executive power of the state extends. While the Governor is bound by the advice of the Council of Ministers (Article 163), the binding nature of such advice will depend on the constitutionality of the same.

⮫ Article 161 consciously provides a 'discretion' to the Governor in taking a final call, even if it was not wide enough to overrule the advice, but it certainly provides latitude to send back any resolution for reconsideration, if, in his opinion, the resolution conflicted with constitutional ends.

⮫ In M.P. Special Police Establishment (2004 (8) SCC P.788) a Constitution Bench had held that the "Concept of Governor acting in his discretion or exercising independent judgment is not alien to the constitution".

Implication of 'consultation':

⮫ In the other Constitution Bench judgment in Sriharan's case (2016), arising out of the core of the Rajiv Gandhi assassination itself, one of the references placed for consideration was whether the term 'consultation' stipulated in Section 435 Cr.P.C. implies 'concurrence'.

⮫ It was held that the word 'consultation' means 'concurrence' of the Central government.

⮫ The Constitution Bench highlighted that there are situations where consideration of remission would have trans-border ramifications and wherever a central agency was involved, the opinion of the Central government must prevail.

Murder under Lists II and III the Seventh Schedule:

⮫ Basing its conclusion on the legal position that the subject matter (Section 302 in the Indian Penal Code) murder, falls within Lists II and III (State and Concurrent lists) of the Seventh Schedule to the Constitution, the learned judges concluded that the State was fully empowered to take a call and recommend remission in this case.

⮫ If it is a simple case of being a Section 302 crime, the reason for finding fault with the Governor's decision to forward the recommendation to the President may be constitutionally correct.

⮫ But the larger controversy as to whether the Governor in his exercise of power under Article 161 is competent at all, to grant pardon or remission in respect of the offences committed by the convicts under the Arms Act, 1959, the Explosive Substances Act, 1908, the Passports Act, 1967, the Foreigners Act, 1946, etc., besides Section 302, is in wobbly terrain.

⮫ According to the decision, it is a simple murder attracting Section 302 of the IPC and therefore the Governor's decision to forward the recommendation to the President is against the letter and spirit of Article 161 meaning it is against the spirit of federalism envisaged in the Constitution.

Article and issues:

⮫ Having unprecedentedly concluded that the executive of the state is competent to decide, the Bench invoked Article 142 of the Constitution to usurp the power of the Governor of the State under Article 161. There are momentous issues that are flagged on the exercise of the power of remission under Article 142, by the Supreme Court in the present factual context.

⮫ The first is whether Article 142 could be invoked by the Court in the circumstances of the case when

the Constitution conferred express power on the Governor alone, for grant of pardon, remission, etc., under Article 161.

- In the case on hand, the Bench found fault with the Governor not having taken a decision on the recommendation of remission by the State Cabinet for a long time.
- The fault of the Governor became more intense in the opinion of the Bench, when the Governor eventually referred the matter to the President of India for his decision, after sitting over the recommendation for more than two years.

Deeper examination needed:

- The entire investigation of the crime was by the Central Bureau of Investigation alone.
- In the teeth of the specific ruling in Sriharan, with reference to the invocation of power by the State government in terms of Sections 432 and 433 of Cr.P.C, the power exercisable by the Governor under Article 161 in respect of the subject matter is not so clear and obvious as ruled by the Bench.
- Whether what the State government could not achieve directly by invoking Sections 432 and 433 of Cr.P.C, without concurrence of Centre could be allowed to take a contrived route vide Article 161 and achieve its objectives is a pertinent issue.
- This aspect requires deeper judicial examination for the sake of constitutional clarity.

Delay by the Governor:

- The second aspect is the delay in taking a decision by the Governor in the matter. The Constitution does not lay down any timeframe for the Governor to act on the advice of the Council of Ministers.
- In a case like the present one, a long consultative process was imperative due to several litigations repeatedly being pursued at the instance of the convicts, under one legal pretext or the other.
- In any event, even if the delay was constitutionally inexcusable or was vulnerable to challenge, the final arbiter of the Constitution (Article 245) could not have trumped Article 161 with Article 142, which is constitutionally jarring. It is usurpation of power of another pillar of democracy.

Sentiments of the victim:

- The Tamil Nadu State Assembly resolution dated September 9, 2018 and the consequent Cabinet recommendation was to 'respect Tamil sentiments'. What of the sentiments of the victims of the crime?
- Earlier, Justice V.R. Krishna Iyer commented that it is a weakness of our jurisprudence that the victims of crime and the distress of the dependents of the prisoners do not attract the attention of law".
- In 2016 (1) SCC P.463 (Rajbala vs State of Haryana), the Supreme Court presciently wrote, "A judge should always bear in mind that erroneous and fallacious

exercise of discretion is perceived by a visible collective.", the visible collective being We The People.

- The evolving principle of constitutional moralism and justice dispensation by the constitutional courts may as well heed the distressed cries of the real and imperceptible victims before showering their grace on the perceptible offenders.

Conclusion:

- The constitutional clarity on the issues is necessary and hence, a deeper investigation is required.

THE CHALLENGE OF REFORMING DEATH PENALTY SENTENCING

Why in news?

- There has been an intense and persistent crisis in the fairness of administering the death penalty in India for many decades.
- At the heart of that crisis has been the concern that there is an existing arbitrariness in sentencing procedures that impose the death penalty, and a significant concern has been that barely any relevant information about the accused enters the courtroom during the sentencing phase.

Recent Judgement

- The Court's recent judgment in Manoj and Ors. vs State of MP seeks to address this long ignored yet critical aspect of death penalty sentencing.
- This specific attempt in Manoj must be seen with the Court's apparent discomfort over the last year with procedural unfairness in sentencing being carried out by the lower courts.

Individualised sentencing:

- The constitutionality of the death penalty was upheld in 1980 in Bachan Singh vs State of Punjab, which greatly emphasised 'individualised sentencing' and called upon courts to consider the 'crime' and the circumstances of the accused.
- However, since Bachan Singh there have been disagreements on which cases warrant the imposition of the death penalty and the nature of information about the accused relevant for sentencing.
- With a vast majority of prisoners being poor, quality legal representation has always been a concern. As a

result, very little attempt is made to collect sentencing information, and very little is known about the accused while sentencing.

Issue of lack of adequate information about the accused in 2021:

➲ Since September 2021, during Justice N.V. Ramana's tenure as the Chief Justice of India, three Benches of the Supreme Court heard arguments in 13 death penalty appeals and delivered judgments in 10 of these cases, resulting in three acquittals in one case and commutations in the rest.

➲ In these decisions, there is a deep and acute concern surrounding the procedural fairness on the imposition of the death penalty and the lack of adequate information about the accused.

➲ The Bench headed by Justice U.U. Lalit has been particularly concerned over the lack of information about the accused.

➲ Recognising the centrality of such information for a fair sentencing process, the Bench passed an order in Manoj in September 2021 calling for reports of the probation officers, prison officers and mental health professionals.

➲ In the final judgment delivered recently, the Supreme Court took important steps towards realising an 'individualised sentencing enquiry' as envisaged by the court in Bachan Singh 42 years ago.

Role of criminogenic factors:

➲ Sentencing happens after an accused has been found guilty of the crime. Here, the circumstances of the accused are considered.

➲ This requires a broad-based inquiry as scientific theories no longer see the accused as individuals who, out of their free-will, make "bad choices" unhindered by their past or present circumstances.

➲ Contemporary understanding of criminogenic factors among scholars and researchers focuses on analysing past social histories, behaviours and life circumstances of the accused as human behaviour is a product of a complex interplay of personal and environmental factors.

Significance of judgment of the Supreme Court in Manoj:

➲ There have been important efforts by courts to bring forth such information. However, the judgment of the Supreme Court in Manoj is significant for two reasons:

a) It indicates a shift towards an evidence-based inquiry to sentencing that invites expert
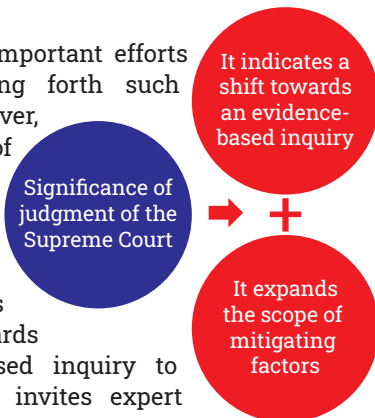
opinions and reports from a wide range of disciplines.

b) It expands the scope of mitigating factors by calling for reports that bring forth pre-offence details such as socio-economic status, education, family background and also post-offence details such as the conduct of the prisoner in prison.

➲ Mitigating factors pertain to life circumstances of an individual that can help determine punishment.

Life-history approach:

➲ The life-history approach provides one such framework that enables a view of life circumstances of an individual as interconnected to each other.

➲ Socio-economic circumstances, for instance, have been recognised as a mitigating factor by courts in various death penalty cases. What makes it compelling is when it is seen as interconnected to other factors, i.e. to see how poverty impacts a particular individual's access to housing, education and health care, which subsequently impacts and shapes their life choices.

➲ It is a first for the Supreme Court to have laid down that information such as early family background that brings out any history of violence or neglect (also known as remote factors or experiences) is a relevant mitigating factor.

➲ Such negative experiences usually accumulate over time and therefore, the life-history approach is uniquely suited to such an inquiry. It provides insights into how early life circumstances shape an individual's character and affect their actions as adults.

Procedural Challenges:

➲ While one hopes that the procedure adopted by the Supreme Court in nuancing sentencing in death penalty cases would be followed by lower courts, the real challenge would emerge with equipping courts to understand such rich information.

➲ The traditional checklist-based approach of presenting mitigation severely deviates from the requirements of individualised sentencing which is the most fundamental principle of the criminal justice system.

➲ Further, keeping in mind the introduction of non-legal expertise into courtrooms, courts will need to equip themselves to appreciate the evidence so presented.

➲ Questions on conflicting findings in reports and opinions presented to the court during sentencing would also need to be addressed keeping in mind existing evidentiary standards and judicial dicta, which suggests courts must not be constrained by confines of the evidence act in capital sentencing.

Way Forward:

➲ The decision in Manoj is indeed a positive step towards a more meaningful and informed sentencing inquiry. However, further inquiry into the complex

questions around sentencing will be inevitable to ensure procedural fairness for those under the sentence of death.

NEED FOR LAW TO COMPENSATE THOSE IMPLICATED IN FALSE CASES

Why in news?

➲ In October 2021, Aryan Khan, son of actor Shah Rukh Khan, was arrested in Mumbai by the Narcotics Control Bureau in a drug racket case.

➲ Now, after many twists and turns in the case, he and five others were given a clean chit by a special investigation team from Delhi.

➲ Besides highlighting the torment suffered by him and his family, Aryan Khan's case also threw the focus on the countless victims of malicious prosecution, many of whom are resourceless.

Impact of false implication & why it should be compensated?

➲ There is a distinction between somebody who has been falsely implicated and somebody who has been implicated but is eventually acquitted, either because the evidence is deficient or because of some other reason.

➲ In the case of Aryan Khan, as it appears from the newspaper reports and some statements that have come out, there was actually no reason to arrest him and keep him in custody for almost a month.

➲ There are several reasons why a person should be compensated if there is false implication, if there has been physical discomfort of being in jail because the person may have been in jail for many years.

➲ Indian justice delivery system is painfully slow. There are instances where persons have spent eight, 10 or more years under trial. Then there is the mental trauma that not only a person, but also their family and children undergo.

➲ There is social stigma. It is also important to look at mental health, emotional health, not only of the person, but also of the family.

Role of judicial officers' along with investigating agency:

➲ Any case of deliberate, intentional arrest or booking of an individual in a criminal case should be compensated. When an agency arrests a person, it's only for 24 hours, and then the person is produced before the court. So it is not the enforcement agencies alone, it's also the judicial mind which is applied within 24 hours.

➲ If the judicial officer feels or thinks that the investigating agency does not have enough evidence or it's going blatantly wrong, they should not hand over the custody either to the agency or to prison.

Would it be fair to say that a wrongful prosecution stems from a malicious probe that operates on a bias and prejudice?

➲ Sometimes there can be genuine mistakes. But a malicious and deliberate act on the part of an investigating officer should be viewed very seriously.

➲ It could be and it may not be. Nowadays, there are several instances of sedition. In a case of a harmless tweet, the prosecution books the person for a charge as serious as sedition, here it is clearly malicious.

➲ Another example is Section 66A (punishment for sending offensive messages through communication service, etc.) of the Information Technology Act that has been struck down by the Supreme Court (in 2015) as unconstitutional. But there are still a few thousand cases that have been filed even after that.

Role of prosecution and the judiciary:

➲ There is also a very heavy responsibility on the judiciary. The judiciary also has to be alive to the fact that it is just a simple tweet and nobody is trying to topple the government. Therefore, the judge must say, 'why accuse the person with sedition' and 'I don't agree with this.'

➲ Similarly, with Section 66A, the judge should ask, 'why have you filed a case under a provision that has been declared to be unconstitutional?'

➲ Both the prosecution and the judiciary have to be very, very careful about this. Because at the end of the day, if the prosecution is not able to prove its case beyond reasonable doubt, which is a standard of proof that is required, then one can come to the conclusion that the prosecution has a malicious intent.

➲ The Law Commission in its report number 277, titled 'Wrongful Prosecution (Miscarriage of Justice): Legal Remedies', has recommended enactment of a specific legal provision for redressal of such cases, covering the substantive and procedural aspects.

How to calculate compensation?
There can be some way of doing it:

➲ First, you have to accept the fact that compensation has to be given, then comes the calculation. There have been instances.

➲ In scientist Nambi Narayanan's case (he was acquitted 24 years after Kerala police arrested him in a fabricated spy case), the Supreme Court gave him ₹50 lakh as compensation (in 2018).

⮑ The Delhi High Court on a couple of occasions has said the person needs to be compensated for having been kept in jail even though he's entitled to bail and all the papers are in order. So, there are a whole lot of factors which point unerringly to the fact that compensation must be given.

Other steps which can be taken:

⮑ Some steps can also be taken in moderation; for example, more professional scrutiny by the senior officers of enforcement agencies.

⮑ In Aryan Khan's case, a senior officer could have applied his mind and maybe advised the overenthusiastic officers on the professional lines of investigation.

⮑ The second role is of the prosecutors, as they are neither with the police nor with the investigating agencies; they are independent officers of the court. So, when the investigating agency or police are saying that a person is involved, and want his custody, even the prosecutors can point out to the enforcement agencies that they are wrong; that their case is not strong, so they should not ask for custody.

⮑ But sometimes, agencies and investigators get very troubled by the thought that if we do not show the arrest of a person who is a very influential person or child of an influential person, adverse reactions shall be drawn by the media and by citizens.

⮑ Therefore, the agencies sometimes err on the side of arresting; the role of the prosecutor and judicial application of mind will help against an error of judgment in prosecuting a person.

Need for a new law to ensure disbursement of compensation?

⮑ There is also a remedy of filing a civil suit by the victim or the family members. But that is time consuming.

⮑ As seen in land acquisition cases, the collector would give some amount, the High Court would double it, the Supreme Court would make it two and a half times or three times more.

⮑ So there is need of a standard which can be laid down by legislation for determining compensation.

Section 211 of the Indian Penal Code:

⮑ Section 211 of the Indian Penal Code talks of a false charge of offence made with an intent to injure.

⮑ It can lead to two years of imprisonment, or up to seven years.

⮑ This section is valid for malicious prosecutions, but further legislation for compensation would be a welcome step.

Legal or statutory responsibility of state in case of false implication:

⮑ One of the consequences of not adhering to that responsibility is compensation. Or it could be punishment in some other form; there can be a departmental inquiry against an errant officer or he can be dismissed from service.

⮑ If the judicial officer at the time of trial, if not earlier, comes to the conclusion that the prosecution's case is false, it can distinguish between a genuine error or a malicious one and the court can pass an order for compensation. The state must also take responsibility in case of wrongful confinement.

⮑ If the judicial officer feels or thinks that the investigating agency does not have enough evidence or it's going blatantly wrong, they should not hand over the custody either to the agency or to prison.

NEW INDIA NEEDS FREE AND QUALITY HIGHER EDUCATION

Context:

⮑ At a time when the demand for quality education and research in leading universities in India and advanced nations is on the rise, the staggering tuition fees demanded by universities of repute, besides deterring the meritorious from pursuing their degrees from world-class universities, create compulsions to turn professions into business propositions rather than opportunities to serve and excel.

Stark example of New York University:

⮑ Carving out a niche in the annals of the global education architecture, New York University's NYU Grossman School of Medicine announced that from the 2021–22 academic year, it will pay the tuition fees for all its students admitted in its MD programme, regardless of their financial needs, thereby becoming the first major American medical school to do so.

Scenario in India:

⮑ In India too, the burden of tuition fees in professional courses is becoming unbearable. Besides, it is causing a serious concern of reducing quality professional education to a commodity rather than the noble service that it ought to be.

⮑ Educational loans, even with government collateral guarantee, are no answer, as the mounting debt of educational loans will cripple the economy of development and public welfare.

⮑ What we need is a university system that fosters an environment of learning in which world-quality education can be provided without taxing learners with the burden of tuition fees.

The Nordic model:

⮑ The Nordic countries; Denmark, Finland, Iceland, Norway, and Sweden provide free higher education to their people, and overseas students were able to study for free until recently.

⮑ In Denmark, however, tuition fees were introduced for international students from outside the European Union and the European Economic Area, in 2006. Sweden followed suit in 2011. Only Finland, Norway, Iceland, and Germany do not charge international students tuition fees.

⮞ This ensures that students receive quality education in the streams that they desire rather than pursuing streams that allow them to earn highly so as to repay their student debt.

How Nordic countries outscore other nations?

⮞ Despite some attempts to impose fees, all these countries are outliers in a world where international students are frequently a valuable source of revenue for institutions.

⮞ All Nordic countries have a strong legacy of equality, extending to equal opportunities in the education system. The Nordic countries have measures in place to promote gender equality and assist students from lower socioeconomic categories to gain access to higher education.

⮞ It is no wonder that these countries continue to figure in top of the world happiness index (Finland at No.1, Denmark at No. 2, Iceland at No.4, Norway at No.8 and Germany at No.14, as per the World Happiness Index 2022).

It reshapes student choices:

⮞ A ray of hope for evolving a progressive university system in professional education has been provided by NYU's Grossman School of Medicine.

⮞ In its announcement, the NYU had pointed out the fact that "overwhelming student debt" is reshaping the medical profession in ways that are bad for the health-care system.

⮞ Such debts prompt graduates to pursue high-paying specialties rather than careers in family medicine, paediatrics, and obstetrics and gynaecology.

⮞ The lead taken by the NYU is bound to inspire many other leading universities to consider and value the student's intellectual acumen rather than financial investment.

⮞ But then, universities need funds for education and research.

Roadmap for India:

⮞ Education is a noble service and an investment to charter a bright future for humanity. If students pay for education, they would be forced to earn from the degrees they acquire. The profession then becomes a privilege to earn rather than a privilege to serve and excel, as it ought to have been.

⮞ There is a strong case for reviving philanthropy and community support for higher education in India. Corporates, generous alumni, and people at large can join in to create strong philanthropic support for higher education and make quality education tuition-free.

⮞ The government, for its part, should be generous enough to declare such philanthropic donations to the cause of higher education and research tax-free, now that the treasury is full of funds from the ever-growing list of income tax and the Goods and Services Tax (GST) payers.

MEKEDATU WATER PROJECT CONTINUES TO DIVIDE KARNATAKA AND TAMIL NADU

Why in news?

⮞ Recently, The Karnataka Cabinet approved the resolution of the Karnataka Legislative Assembly and Legislative Council that urged the Centre to provide clearance to the Mekedatu project.

⮞ The Cabinet was also said to have approved the resolution passed by both the Houses that the DPR for Godavari-Krishna-Pennar-Cauvery-Vaiagai-Gundar project taken up by Tamil Nadu should not be cleared till the decision on the distribution of the rightful share of all the basin states were established.
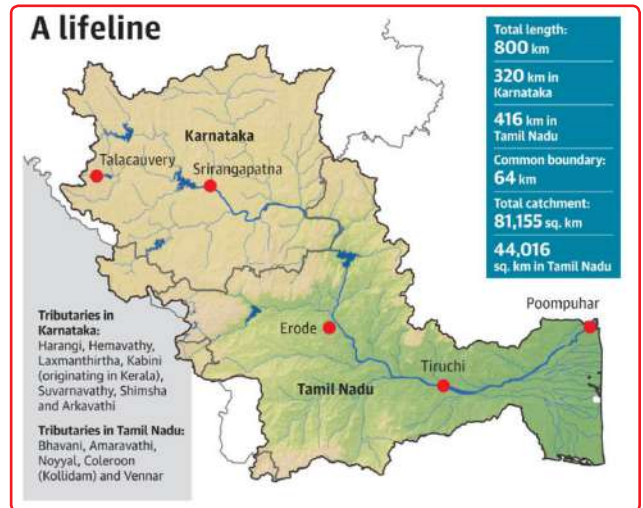
⮞ Karnataka has been pursuing, with renewed interest, the project of building a reservoir to cater to the drinking water requirements of Bengaluru, as it has allocated ₹1,000 crore in Budget of 2022.

Ecological significance of Mekedatu:

⮞ Broadly meant in Kannada as goat's leap, Mekedatu, part of the Cauvery Wildlife Sanctuary, is hardly three km downstream of the point of confluence of the Arkavathy and the Cauvery river, called Sangama.

⮞ The sanctuary is home to grizzled giant squirrel, considered endemic to Sri Lanka and south India and classified by the International Union for Conservation of Nature as near threatened.

⮞ Endangered fish species, Deccan Mahsheer, and vulnerable species such as oriental small clawed otter are among those which have found a haven in the Cauvery.

How Mekedatu is a need for Bengaluru?

⮞ All residents of the metropolis, including those in added or extended areas, want the Cauvery water, because the quality of groundwater is not that good.

⮞ The Bangalore Water Supply and Sewerage Board supplies 1,450 million litres a day (MLD), using the Cauvery as the source, as per the information available on its website.

➲ Another project, envisaging the supply of 775 MLD, is under way. As per an estimate, the population of Bengaluru, which is now 13 million, is expected to touch the 20-million mark by 2031, when the city will need 4,000 MLD.

➲ It is not just the IT professionals but several villagers in and around Mekedatu are also eagerly looking forward to the proposed reservoir project.

Background:

➲ Originally mooted in 1948, the project had undergone several changes in its scope and coverage over the years. After the re-organisation of States in 1956, it was talked about prominently, especially in the early 1960s. Around the same time, Tamil Nadu came up with the Hogenakkal project.

➲ Subsequently, Mekedatu was almost forgotten after the two States were locked in an acrimonious dispute over sharing the Cauvery river water.

➲ At one stage, the proposed project at Mekedatu was viewed only as a hydroelectric project and the National Hydro Power Corporation (NHPC), a Central agency, had shown interest in taking it up as a package of four projects — two each in the two riparian States.

➲ According to the NHPC's plan, in addition to having a power plant of 400 MW at Mekedatu, Karnataka would have one at Shivasamudram of 345 MW. In Tamil Nadu, plants were proposed in Rasimanal (360 MW) and Hogenakkal (120 MW).

➲ Since the late 1990s, the Central government, for about 10 years, had made several attempts to work out a consensus between the two States on the execution of the projects. Now, Karnataka is back to implementing Mekedatu on its own.

What is Mekedatu?

➲ As per the upper riparian State's plan, a ₹9,000-crore balancing reservoir has been proposed at Mekedatu, seeking to impound 67.16 tmc ft (thousand million cubic ft.) of water.

➲ The project, which will submerge around 4,996 hectares of land, including about 4,800 hectares of forest and wildlife land, is expected to help Karnataka utilise an additional 4.75 tmc ft of water allotted by the Supreme Court in its judgement in February 2018 to meet the drinking water needs of Bengaluru and neighbouring areas.

➲ It will have a 400 MW hydro power component too. More importantly, the proposed dam will regulate the release of required quantum of water to Tamil Nadu on a monthly basis as per the Cauvery Water Disputes Tribunal (CWDT)'s final award of February 2007, as modified by the Supreme Court, says the Karnataka government's pre-feasibility report of June 2019.

➲ The CWDT emphasised that "whenever any such hydro-power project is constructed and Cauvery waters are stored in the reservoir, the pattern of downstream releases should be consistent with our

order so that the irrigation requirements are not jeopardised".

➲ This position was not disturbed by the Supreme Court in its judgment in February 2018, while reducing the share of Tamil Nadu from 192 tmc ft to 177.25 tmc ft.

➲ Besides, the one constant refrain among proponents of the project in Karnataka is that a lot of Cauvery water goes waste to the sea, after it reaches Tamil Nadu. At least, the proposed reservoir will reduce the waste.

Why Tamil Nadu objects?

➲ But, the history of the dispute over sharing of the Cauvery water has provided several unpleasant experiences to Tamil Nadu, leading to a serious trust deficit with Karnataka.

➲ Tamil Nadu's grievance against Karnataka acquires more intensity as the track record of the latter in releasing water during the first four months of the water year (June to May) is seen as far from being satisfactory.

➲ These four months, which mark southwest monsoon too, yield much less rain for Tamil Nadu than many other States in the country because the State falls in the rain shadow region.

➲ This is one of the major reasons for the Tribunal and the Supreme Court to have ensured that Tamil Nadu gets approximately two-thirds (123.14 tmc ft) of its annual quota (177.25 tmc ft) of Cauvery water during the four months.

➲ But, the Central Water Commission data on Cauvery water realisation at Billigundlu shows that ever since the Tribunal's final order was published in the Centre's gazette in 2013, Tamil Nadu got its due or more than its quota during the period only in four out of nine years, even though its overall realisation exceeded the annual quota in six out of nine years.

Trust deficit:

➲ It is because of the trust deficit factor that Tamil Nadu has been opposing any discussion to be taken up by the Cauvery Water Management Authority (CWMA), a body created to ensure the implementation of the CWDT's final order and the Supreme Court's judgment of 2018, on the Mekedatu matter, despite repeated attempts by Karnataka to have the issue discussed.

➲ In fact, on many occasions, the CWMA had even included Mekedatu as an item on the agenda for its meetings including its last on February 11, 2022.

Detailed Project Report (DPR):

➲ In October 2018, Karnataka, which had earlier submitted the feasibility report to Central Water Commission (CWC), got a glimmer of hope about the project when it received "in principle" clearance from the CWC's screening committee for the preparation of Detailed Project Report (DPR) of the project.

➲ The panel had provided a rider, saying that the CWMA's approval would be a pre-requisite for

consideration of the DPR by the Advisory Committee of the Union Ministry of Jal Shakti.

- An agitated Tamil Nadu had approached the Supreme Court with an application to restrain Karnataka from preparing the DPR. It had also filed a contempt petition against officials concerned. The cases are still pending with the Court.

Environmental Impact Assessment (EIA):

- The Karnataka government, in January 2019, submitted the DPR on the Mekedatu Balancing Reservoir cum Drinking Water Project to the CWC, which, in turn, had forwarded it to the Authority.
- Five months later, the upper riparian State moved the Union Ministry of Environment, Forest and Climate Change with a proposal for getting its proposal cleared for the Terms of Reference (ToR) to conduct the Environmental Impact Assessment (EIA) study regarding the project.
- But, it suffered a setback there as the Ministry's Expert Appraisal Committee, in July 2019, took the stand that in view of the inter-State issues, an "amicable solution" needed to be arrived at between the two States. The Ministry had also decided that it would consider the proposal for ToR only after getting the clearances of the Union Ministry of Jal Shakti and the CWMA on the DPR. The Authority is expected to hold its meeting in June after the onset of southwest monsoon.

Opposition by various sections:

- The opposition to Mekedatu is not just from Tamil Nadu. A section of residents of Muthathi village in Mandya district of Karnataka is against the project as their village will get submerged if the reservoir becomes a reality.
- Four other villages — Sangama, Kongedoddi, Madavala and Bommasandra — will also go under the water.
- The opposition to the project is also from other sections of society too.

Alternative course:

Rejuvenation of lakes:

- Pointing out that there are 193 lakes in and around the city, Indian Institute of Science, Bengaluru, says the best option to meet the local water demand is to rejuvenate the water bodies; enhance storage capacity, and improve groundwater recharge. This assumes critical importance as a substantial portion of the city's water needs are met through groundwater.
- Removal of silt from the lakes, re-establishing interconnection among the lakes and getting rid of the encroachments are among the measures suggested by him.
- Keeping Bengaluru's requirement as 18 tmc ft annually, the city, having a spatial extent of 740 sq km, gets annual rainfall of 700-850 mm, which, in turn, yields about 15 tmc ft. Also, wastewater, if properly

treated, will give about 16 tmc ft. Optimal treatment of wastewater is possible through the integration of constructed wetlands and algal ponds at the inlet with the secondary treatment plants.

THE IPEF HOLDS PROMISE BUT THERE ARE PERILS TOO

Why in news?

- Recently, the U.S. administration launched its own version of a "pivot to Asia" through the establishment of the Indo-Pacific Economic Framework for Prosperity (IPEF).
- The IPEF reignites the twin ambitions of the U.S. to provide economic leadership and to challenge China's hegemony in the region.

Member nations:

- IPEF was launched with other partner countries; Australia, Brunei, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, Vietnam and the United States.

Indo-Pacific Economic Framework for Prosperity launched

"We share a commitment to a free, open, fair, inclusive, interconnected, resilient, secure, and prosperous Indo-Pacific region that has potential to achieve sustainable & inclusive economic growth."

Participating Countries

India, Australia, Japan, Thailand, Singapore, Philippines, Malaysia, Vietnam, Indonesia, New Zealand, United States, Republic of Korea, Brunei Darussalam

Within days of its launch, IPEF expanded its membership to the Pacific Island states, with Fiji joining the initiative.

How IPEF is "Made in America"?

- An American initiative to bring together its allies in the Indo-Pacific region to enhance economic cooperation is bound to lead to comparisons with one of former U.S. President Barack Obama's pet projects, the Trans-Pacific Partnership (TPP), which was spiked by Donald Trump.
- The U.S. Trade Administration had touted the TPP as "Made in America", a tag that seems equally appropriate for the IPEF.
- At its launch, the IPEF was proposed as an elaborate framework of rules covering four pillars, namely, fair

and resilient trade, supply chain resiliency, clean energy decarbonisation, and tax and anti-corruption.

- U.S. has been carefully constructing the framework ever since President Biden had first spoken about it in October 2021 during the East Asia Summit, in the presence of all IPEF signatories except Fiji.

Stakeholders:

- It invited public comments in March from "interested parties" on the four pillars to assist its trade administration for developing the U.S.'s position in IPEF negotiations.

- Major corporations, including Google, Microsoft, IBM, Intel and Cargill and influential industry associations such as the Biotechnology Innovation Organization and the Pharmaceutical Research and Manufacturers of America (PhRMA) responded to the call.

Why IPRs have been excluded?

- The U.S. has announced that under the "fair and resilient trade" pillar, it "aims to develop high-standard, worker-centered commitments" covering labour rights, the environment and climate, the digital economy, agriculture, transparency and good regulatory practices, competition policy and trade facilitation.

- The clear focus of this agenda is to focus on issues which the U.S. considers vital to further its interests. One notable exclusion from this list is intellectual property rights (IPRs) that have generally been at the heart of the U.S.' economic engagements with its partner countries.

- One possible reason for excluding IPRs could be that these are seen as the major reason why only 16.2% of people in low-income countries have received at least one dose of the COVID-19 vaccine until today.

- But with several corporations, including those from the pharmaceutical and electronics sectors, and members of the Congress making a strong pitch for their inclusion, IPRs could soon figure in the IPEF negotiations.

Fair and resilient trade:

- Promoting "fair and resilient trade" defines the U.S.'s agenda on trade, side-stepping its pursuit of the free trade ideal. The reason behind this shift could be that for most IPEF signatories, import tariffs are passé. Only four of the 14 signatories have average tariffs in double digits.

- The primary objective of the IPEF is to ensure a high degree of regulatory coherence and to make market access contingent upon realisation of regulatory standards.

- It must be pointed out that standards and regulations in most developed countries often create discretionary/discriminatory barriers to trade and overcoming these barriers is usually beyond the capacities, both institutional and otherwise, of lesser developed countries.

Contentious issues:

- Two contentious issues that are generally included in free trade agreements (FTAs) involving the U.S., namely, labour rights and the environment and climate change, are duly included in the IPEF. Enforcement of labour rights using trade rules is quite contentious, having been rejected by the members of the World Trade Organization (WTO) on several occasions.

- WTO members had arrived at a consensus that the "internationally recognized core labour standards" of the International Labour Organization (ILO) should be used to deal with issues pertaining to labour rights. They had also rejected the use of labour standards for protectionist purposes.

- As regards the environment, the United Nations Framework Convention on Climate Change (UNFCCC) had cautioned that "measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade". The IPEF could threaten abrogation of these decisions at the WTO and the UNFCCC.

Data portability:

- A third set of issues, whose ramifications on the future of the digital economy and beyond can be far reaching, are those related to standards on cross-border data flows and data localisations.

- Control over data, the driver of the digital economy, will increasingly determine the dynamics of economies, and hence the issue of data portability assumes critical importance.

- Although China was not mentioned at the official launch of the IPEF, possibly for diplomatic reasons, the second largest economy has been at the centre of America's strategies for the Indo-Pacific, especially with regard to supply chains.

- However, the crux of the American narrative on this issue is the hope that U.S. manufacturing giants, most of which have made China their preferred production bases at least since the 1990s, would move to the other countries in the Indo-Pacific.

- But even if these corporations move to countries other than China, how can the U.S. ensure supply chain resilience?

Challenges ahead for India from the IPEF:

- While endorsing the IPEF, Indian Prime Minister had spoken of India's aspiration to participate more substantially in the supply chains in the region. However, this would have its challenges.

Data localization challenge for India:

- For instance, while addressing the needs of the digital economy, the U.S. has emphasised the importance of "high-standard rules... on cross-border data flows and data localization".

➲ On this issue of data localisation, the Government of India has not yet taken a clear position. In 2019, its likely preference was revealed in the Draft National e-Commerce Policy, wherein it had backed restrictions on cross-border data flows.

➲ The key challenge for India is to sustain this diametrically opposite view to an uncompromising position of the U.S. on data localisation.

Flexible labour market:

➲ India should also be wary of the considerable emphasis that is being given to strengthening labour rights in the on-going discussions on the IPEF, both by corporate interests and members of the Congress.

A 'SILVER' MOMENT TO PROPEL A BAY OF BENGAL DREAM

Why in news?

➲ June 6 marked the completion of 25 years since the 1997 Bangkok Declaration launched a modest grouping (of Bangladesh, India, Sri Lanka and Thailand), with the acronym, BIST-EC.

➲ Three countries (Nepal, Bhutan and Myanmar) joined it later to make it the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).

➲ It as a platform for economic growth, prosperity and trade for the region was conceived to be a carve out from SAARC and ASEAN, given the apprehensions, many of the participating countries have with the two blocks.

A quick review of latest development in BIMSTEC:

➲ In the 25 years of existence, the Colombo summit in March 2022 for the first time, tried to provide an architectural framework for BIMSTEC.

➲ It has for the first time institutionalised the future roadmap, by agreeing to have yearly foreign affairs minister's meeting and summits every two years.

➲ The member-countries are home to nearly a quarter of the human population and have nearly $4 trillion combined GDP. They have a huge potential for growth and large market potential, as has been evidenced by nearly doubling of Bangladesh and Nepal's GDP during the period BIMSTEC has been in existence.

Consensus over free trade agreement:

➲ Sadly, BIMSTEC had no role to play in this growth story because unlike ASEAN, it doesnot have a free trade agreement amongst its members.

➲ One of the issues discussed in Colombo was a quick conclusion to a free trade agreement for bringing increased prosperity to citizens.

➲ However, the legacy challenges of mistrust amongst BIMSTEC partners and the rise of non-democratic forces in national politics (Myanmar) could stall the process.

➲ The political leadership addressing BIMSTEC cooperation have to realise that pushing a free trade agreement is going to be a domestic exercise, where their own political opponents would create roadblocks.

Key achievements:

➲ BIMSTEC has crafted a new Charter for itself, spelling out the grouping's vision, functions of its constituent parts, and has secured a legal personality.

➲ It has prioritised the sectors of cooperation, reducing them from the unwieldy 14 to the more manageable seven, with each member-state serving as the lead country for the assigned sector.

➲ It has, finally, taken measures to strengthen the Secretariat, although some members are yet to extend adequate personnel support to it.

Regular summits & collaboration:

➲ Unlike the South Asian Association for Regional Cooperation, post-2014, BIMSTEC has continued to hold its summits and meetings of Foreign Ministers.

➲ Unlike the Indian Ocean Rim Association (IORA) which held only one summit since its establishment in 1997, BIMSTEC has succeeded in holding five summits so far; it has now resolved to hold regular summits once in two years.

➲ The grouping has also registered progress in combating terrorism, forging security cooperation, and creating mechanisms and practices for the better management of humanitarian assistance and disaster relief.

➲ A whole basket of memoranda of understanding, agreements and legal instruments provide the foundation for developing functional cooperation in select areas such as agriculture, trade, sustainable development and connectivity. Institutions such as an Energy Centre and the Centre on Weather and Climate are in place to push sectoral cooperation forward.

Internal issues:

➲ The BIMSTEC region witnessed the influx of over a million Rohingya refugees into Bangladesh, the result of oppression by the Myanmar military; the coup in Myanmar that led to its virtual boycott by a large segment of the international community; and

the grave political and economic crisis afflicting Sri Lanka.

Connectivity:

➭ There is disappointment on connectivity in infrastructure (roads, railways, air, river, and coastal shipping links), energy, the digital and financial domain, and institutions that bring people closer together for trade, tourism and cultural exchanges.

➭ Only limited progress has been achieved so far, despite the adoption of the Master Plan for Connectivity supported by the Asian Development Bank (ADB).

➭ Much of the connectivity established recently is the outcome of bilateral initiatives taken by India, Bangladesh, Nepal and Bhutan to strengthen transport links. Mega-projects aimed to improve connectivity between India and Myanmar (and Thailand) have been delayed inordinately.

➭ For greater regional connectivity, more financial resources are needed. The movement towards establishing the BIMSTEC Development Fund is minimal. The grouping has talked about the Blue Economy but is yet to begin any work on it. The involvement of the 'Third Space' needs to be expanded significantly.

Strategic interest of India in BIMSTEC:

➭ For India, BIMSTEC allows the confluence of its Act East and the Neighbourhood Policies. This, while in itself being favourable, also allows it to coincide with its strategic view of the Indo-Pacific theatre.

➭ Due to the failure of SAARC, given the Indo-Pak hostilities, India has turned to the BIMSTEC nations for expanding its reach and presence in the Indo-Pacific region.

➭ Today, India's foreign policy is primarily concerned with the US and China power nexus. However, it's also the China concern which has forced India to shift its focus primarily from the US to start counting upon smaller and middle power nations. This has made it turn to the other Indo-Pacific nations, particularly in Southeast Asia. This is how BIMSTEC became important to serve India's security concerns in the Indo-Pacific.

Way Forward:

➭ An exciting destiny awaits BIMSTEC as it works to realise the vision of the Bay of Bengal Community (BOBC). In this Indo-Pacific century, the BOBC has the potential to play a pivotal role, deepening linkages between South Asia and Southeast Asia.

➭ It should accelerate the region's economic development by collaborating with the newly minted Indo-Pacific Economic Framework for Prosperity (IPEF). New synergy should be created between BIMSTEC and the IPEF.

➭ Finally, while all member-states are equal, three have a special responsibility: Bangladesh as the host of the BIMSTEC Secretariat; Thailand as the representative of Southeast Asia; and India as the largest state in South Asia. This trio must be the engine to pull the BIMSTEC train with imagination and determination.

INDIA MUST COUNTER CHINA IN S-E ASIA

Context:

➭ India and China have a long and complex bilateral relationship that oscillates between concepts of "Chindia" and great power rivalry.

➭ In South Asia, India seems to be a regional power by default. But a closer look reveals that China is gaining an upper hand in the region.

Economic power:

➭ In terms of money and trade, it is emerging as a global force. Despite its lack of technological advancement, China controls a majority of the world through its corporate acumen and debt trap strategy. China's economic growth has accelerated to the point where it is now the world's leading economy.

How China emerged as militarily and strategic power?

➭ Following the fall of the Soviet Union in 1991, China's chances of increasing its strength grew. China was not in good shape before 1950, but after the advent of Mao and the Communist party, China started to gain power.

➭ But in a real sense, the rise of China militarily and as a strategic power, started with the fall of the USSR. The instinct for survival and self-sufficiency made the Chinese Communist Party think beyond its borders.

➭ The presence of a single global superpower, the USA and the wars waged during this period in Kuwait and Iraq sent messages to the non-Western nations that US foreign relations are volatile and may even turn against allies.

Communist state with capitalist characteristics:

➭ The rise of China was not an accident, as it had the highest employable population in the world during the turn of the century. China became the factory of the world, leveraging on its cheap labour. This made several countries turn to China to source the parts and raw materials for their production and consumption.

- The Chinese state called a communist state with capitalist characteristics used this to help solve the social and economic crisis at home and it became a country developed enough to export not just small electronics and toys, but also weapons and its state-run companies, to the developing world.

Threat of U.S. led expansionism:

- The second prong for the increased Chinese domination in affairs outside its borders came with the concentration of modernisation of its armed forces to conduct operations in the western Asian region and to protect its eastern seaboard from the might of US carriers and bombers taking off from Guam and Hawaii.
- The need for an adventurous and venturing naval force, able to use the physical and numerical capacity to overwhelm the enemy was the need of the Chinese higher command. The brewing situation in the South China Sea was also a push factor.
- The South China Sea area is under competition from seven states and arch-nemesis Taiwan, just 100 miles from mainland China.
- The Chinese command was also scared that American-led expansionism as happened in Eastern Europe could also happen in Asia. The sale of some strategic weapons by the US to Taiwan, the Philippines and Indonesia, and the stationing of anti-ballistic missiles at US bases in South Korea and Japan led to heightened Chinese calls for restraint from the US.

China's role in the Indian Ocean & the South China Sea:

- The Chinese side replied in the same way by increasing its role in the Indian Ocean by building naval bases and also making incursions using its navy and the naval militia flotilla consisting of fisher boats, also known as 'little blue men'. This tactic has been used in the Scarborough islands of the Philippines by the Chinese navy, to show their military superiority in the region.
- China has also been fortifying and militarising islands in the South China Sea as well as the Sea of Japan.
- China also announced an ADIZ or Air Defence Identification Zone in the South China Sea, where all passing ships and aircraft need to identify themselves to Chinese officials. But this move has been opposed by the US using the 'freedom of navigation' exercises.

Sino- Indian relations & similarities:

- The geographical location of India has both advantages as well as disadvantages. It is surrounded by non-friendly countries like Pakistan and China, as well as neutral countries like Nepal, Myanmar, and Sri Lanka. Sino- Indian relations are as old as the formation of human civilization.

- Throughout history, both Indian and Chinese civilizations faced several existential crises. Many parallels can be drawn between the two, like the lack of a unified commanding authority over the territory for a long period and the intervention of foreign powers to take advantage of the natives.
- Both India and the People's Republic of China were introduced to the modern, post-WW2 world at the same time.

Sino-Indian war of 1962:

- There are very few instances of similarities after that time, as China took the path of a centralised communist regime under the general secretary of CCP, Mao Ze Dong and India emerged as a democratic republic under PM Jawaharlal Nehru. China was behind the Iron Curtain and was isolated, while India followed a more liberal but socialist governance model.
- The Sino-Indian war of 1962 was a big blow to the Indian defence establishment as well as Indian administrations, who gave very few decision-making powers to the military to forestall any chance of a coup.
- The Indian system, a parliamentary democracy, was not suited for fast and powerful decisions on the military front. This meant that Indian defence acquisitions were inefficient and slow.

Rise of China militarily:

- The rise of China militarily can be described by certain characteristics – a centralised command structure based on the Soviet military model, ideologically motivated troops with a good image in Chinese society and the existence of good facilities for soldiers and commanders as the military is treated as part of the central core of government.
- These characteristics gave the PLA troops much-needed force concentration and allowed emergency procurement of military essentials according to their defence doctrine and usage and not based on comparisons.
- Till the fall of the Soviet Union, China stayed in the shadows and was not interested in a position of global significance. It didn't proactively use the power it had from the UNSC and was concentrated on small border clashes with neighbours like India, Mongolia, Vietnam and Hong Kong. But the fall of the USSR forced China to take up the position of a contender against western Neo-imperialism.

Distrust among Sino-India relations:

- From the Indian perspective, the rise of China happened after the war of 1962, which was painful to Indian military morale. It also created a public image of China being an untrustworthy party to agreements and treaties. China's rise from then onwards was treated with suspicion.

➲ During the 1971 Bangladesh liberation war, there was Chinese involvement in moving troops against India in the Himalayan borders to open up a new front. China at the time was against the Soviet Union and stood with the western side with the likes of the US, Pakistan and UK.

➲ In 1987, China and India had a small clash with their border troops in Sikkim. An agreement on the maintenance of peace and tranquillity along the line of actual control in the India-China border areas was reached in September 1993 and formed the basis of the border management between China and India.

Sino-Indian relations are harder to negotiate due to some major reasons:

➲ The ongoing conflict over the Line of Actual Control or the LAC, which is the border between India and China, is not accepted as a legitimate border by the Chinese side.

➲ The actions by the Chinese PLA, and PLAAF to make incursions into Indian territory in Arunachal Pradesh, Ladakh and the tri-junction area in Bhutan.

➲ The increased presence of PLAN ships in the Indian Ocean region and the docking of PLAN submarines and destroyers in countries like Sri Lanka, Bangladesh etc, will make India suspicious.

➲ The increased relations between Pakistan and China, including the proposed road connectivity between Pakistan and China through Pakistan Occupied Kashmir.

Way Forward:

➲ China is trying to build its own form of colonization with the help of money. This technique has been used by China in South Asia, but due to the rise of India, China is not able to take complete control over the region.

➲ China is trying to surround India by getting involved in its neighbouring countries. If India needs to maintain its power in the South Asian region, it must take care of its neighbours.

INDIA'S OUTREACH TO THE TALIBAN

Why in news?

➲ Recently, a delegation from the Ministry of External Affairs (MEA) was in Kabul, meeting with Acting Foreign Minister Amir Khan Muttaqi, among others.

➲ At around the same time, India's National Security Advisor was in Tajikistan, declaring that India would remain an important stakeholder in Afghanistan and calling for assistance to bolster Kabul's ability to counter terrorism.

Engagement with Taliban leaders:

➲ The announcement by the MEA of to Kabul to oversee delivery operations and discuss India's humanitarian assistance to Afghanistan with the Taliban leaders, shouldn't come as a surprise.

➲ There were also reports that a team of Indian officials had visited Kabul in February to explore the possibility of reopening the Indian embassy, albeit in a very scaled-down way and for a very limited purpose.

➲ Although contacts between India and the Taliban commenced long before the Taliban takeover of Afghanistan, the first publicly acknowledged meeting between Indian officials and the Taliban took place at the request of the latter in Doha, after the Taliban captured Kabul.

➲ Earlier, Taliban have held out assurances of security if India opened her mission and have sought closer cultural, economic, and even security ties with India.

Humanitarian assistance:

➲ The decision of the Indian government to send 50,000 tonnes of wheat, medicines, and vaccines to Afghanistan as humanitarian assistance provided the first big opening.

➲ Late in 2021, suggestions were made to the government to send a delegation to oversee the aid distribution and use the opportunity to connect with the Taliban leadership in Kabul.

➲ The proposed visit would give officials an idea of the ground situation, which would be useful in deciding the next course of action.

➲ Given that many other countries were sending delegations to Kabul, there was no reason why India should stay away from an area in which it has vital security and strategic interests.

Taliban 2.0:

➲ Whilst India wasn't in any mood to break away from the international consensus and recognise the Emirate, it was not entirely averse to the possibility of engagement.

➲ Even so, India remained in a wait-and-watch mode, partly to see if the Taliban 2.0 was an updated version of the original Taliban, partly to observe how the dynamics between the Taliban and Pakistan played out, and partly to see how the rest of the world was reacting and responding to the developments inside Afghanistan, including Taliban's policies on terrorism, women, minorities, and political opponents.

➲ There was probably also a political and ideological resistance on part of the government in Delhi.

➥ After all, the incongruity of taking a hard stance against Islamist terror groups operating against India and at the same time doing business with the Taliban was quite glaring.

How Pakistan's influence and control over the Taliban has reduced?

➥ After the Taliban takeover in August 2021, there was discussion about how India had suffered a serious strategic setback and would have no role or say in Afghanistan for a long time to come. However, even back then, it was quite clear that it was only a matter of time before India would be back in the game.

➥ The world in the 2020s was very different from what it was in the 1990s when Pakistan was pretty much calling all the shots in Afghanistan. While Pakistan remains a pivotal player even today, its influence and control over the Taliban are just not what it was a quarter-century ago.

➥ Back in the 1990s, Pakistan wasn't as broke as it is today. This meant that apart from security assistance Pakistan was also able to help the Taliban financially and economically. Diplomatically, Pakistan was a lot more relevant in international affairs in the 1990s than it is today.

➥ In other words, Pakistan's ability to influence the Taliban is circumscribed by its own economic, diplomatic, and security challenges.

How Taliban 2.0 is organizationally changed?

➥ The Taliban have also changed not ideologically but organisationally. There are tribal, regional, political, and even policy-based (between the pragmatists and hard-liners) divisions in the Taliban that were not so visible back in the 1990s. For now, the tussle between the different factions has not shown any signs of escalating into an internecine conflict.

➥ However, it does create some space for India, especially because some of these factions are not exactly enamoured of Pakistan which treated many Taliban leaders very shabbily, bullying them, incarcerating them, and blackmailing them to make them compliant.

➥ Developing relations with India gives them certain leverage over Pakistan. The way this dynamic play is that the more overbearing Pakistan becomes, the more Afghans will gravitate toward India.

Global stance towards Afghanistan:

➥ The options available to India are no different than those available to any other country. The Americans have summed these up in three words: Engage, isolate, or oppose.

➥ The US officials say that they are focused on the first two options and the third option is, for now, off the table. India has so far focused only on the isolate option. However, beyond a point, this option will yield diminishing returns, especially because many other countries are now starting to 'engage' the Taliban.

➥ Contradictory though it may appear, most countries are adopting a policy of both engaging and isolating the Taliban. They are engaging by holding a dialogue, providing humanitarian, and even some economic assistance, reopening their missions and pushing the Taliban to live up to some of their commitments on human rights, women, and minority rights, and giving safe passage to Afghans who want to leave.

➥ At the same time, they are isolating the Taliban by holding back on formal diplomatic recognition, providing aid, and assistance to the regime, and giving access to the international financial system.

What should be India's policy towards Afghanistan?

➥ The Indian policy should incorporate all three options, with some differences. While there is a case for India to engage with the Taliban, India must simultaneously reach out to its old friends, most of who are in exile.

➥ As a country that is rooting for stability in Afghanistan and is pushing for an inclusive government, India can use its contacts with the exiles to push for reconciliation.

Indian Embassy & consulates:

➥ As part of its engagement, India can reopen not just its embassy, but also its four consulates. This will be a litmus test of sorts to see how much the Taliban are independent of Pakistani influence. Engagement will also mean giving some economic, development, and humanitarian assistance.

➥ Even as India engages the Taliban, it must simultaneously isolate the Taliban, and not break ranks with the rest of the international community.

Supporting anti-Taliban forces:

➥ The last prong of India's approach has to be to oppose the Taliban, not just diplomatically and politically, but also by covertly supporting anti-Taliban forces. After all, the Taliban are doing the same by fraternising with organisations like Jaish-e-Mohammed and al-Qaeda.

➥ If anything, this can be India's carrot-and-stick approach with the Taliban. If they remain recalcitrant, then it is quite likely other countries will also start supporting the anti-Taliban forces, which will add to India's diplomatic and strategic heft in Afghanistan.

Way Forward:

➥ There are never any full stops in Afghanistan and, therefore, there is no reason why India should put any full stops in the path of its policy in Afghanistan. Pragmatism combined with some hard-nosed moves is the way to not just get back in the game, but also guide its course to the extent possible.

AN ENDURING AGREEMENT
BRIDGING INDIA-PAKISTAN TIES

Why in news?

➲ Recently, the 118th meeting of the Permanent Indus Commission (PIC) comprising the Indus Commissioners of India and Pakistan was held in New Delhi.

➲ Following this, it is important to reflect on the struggles and the high stakes that the two countries have experienced to ensure a long-lasting treaty on the one hand and the lessons that can be drawn to address multiple concerns pending in the region on the other.

A bright spot:

➲ The Indus Waters Treaty (IWT) is an established water-distribution treaty between India and Pakistan to use water in the Indus and its tributaries.

➲ In the words of former U.S. President Dwight Eisenhower, the treaty has since its existence in 1960, served as "one bright spot ... in a very depressing world picture that we see so often", resolving the long-standing differences between India and Pakistan since Partition.

Cooperative mechanism under Indus Waters Treaty:

➲ After years of arduous negotiations, the Indus Waters Treaty was signed in Karachi on September 19, 1960, by then Indian Prime Minister Jawaharlal Nehru and then Pakistani President Ayub Khan, negotiated by the World Bank.

➲ The treaty establishes a cooperative mechanism for exchanging information between the two countries regarding the use of the western rivers (Indus, Jhelum, Chenab) allocated to Pakistan and the eastern rivers (Ravi, Beas, Sutlej) allocated to India.

➲ However, the treaty also underlines provisions allowing each country to use the rivers allocated to the other for certain purposes such as irrigation and hydroelectricity.

➲ The Permanent Indus Commission, which has a commissioner from each country, oversees the cooperative mechanism and ensures that the two countries meet annually (alternately in India and Pakistan) to discuss myriad issues emerging from the treaty.

➲ In 2022, the commission met twice, in March in Islamabad, Pakistan, and then in New Delhi, in May.

Causes of contention:

➲ India-Pakistan relations have most often been embroiled in the high politics of the region's history resulting in a political stalemate between the two countries. It is a rare feat that despite the many lows in India-Pakistan relations, talks under the treaty have been held on a regular basis.

Differences over hydroelectric power plants:

➲ Nonetheless, throughout its existence, there have been many occasions during which differences between the two countries were discernible.

➲ For instance, both countries held different positions when Pakistan raised objections regarding the technical design features of the Kishanganga (330 megawatts) and Ratle (850 megawatts) hydroelectric power plants located on the tributaries of the Jhelum and the Chenab, respectively, designated as "Western Rivers".

➲ However, under Articles III and VII of the treaty, India is permitted to construct hydroelectric power facilities on these rivers (subject to constraints specified in Annexures to the Treaty).

Pakistan approached the World Bank in reference to Article IX Clause 5 of the treaty:

➲ Differences were also discernible when Pakistan approached the World Bank to facilitate the setting up of a court of arbitration to address the concerns related to these two projects referred to in Article IX Clause 5 of the treaty, and when India requested the appointment of a Neutral Expert referent to Clause 2.1 of Article IX on the settlement of differences and dispute of the treaty, respectively. Disagreements continued on the issue with many meetings brokered by the World Bank to resolve their disagreements. But it was without any success.

Resolution by World Bank:

➲ Eventually, on March 31, 2022, the World Bank, in view of the differences, decided to resume two separate processes by appointing a neutral expert and a chairman for the court of arbitration. However, the two parties have not been able to find an acceptable solution.

➲ The appointment of a neutral expert will find precedence to address the differences since under Article IX Clause 6 of the treaty provisions, Arbitration 'shall not apply to any difference while it is being dealt with by a Neutral Expert'. Therefore, the two separate processes are more likely to generate technical and legal repercussions.

Invoking Article VII Clause 2 on future cooperation by Pakistan:

➲ Similarly, Pakistan, invoking Article VII Clause 2 on future cooperation, raised objections on the construction and technical designs of the Pakal Dul and Lower Kalnai hydropower plants located on Marusudar river, a tributary of the Chenab, in Kishtwar district of Jammu and Kashmir.

➲ The 117th and the 118th meetings of the Permanent Indus Commission held in 2022 deliberated this issue. Here, India has assured Pakistan that all the concerned projects are treaty compliant.

Indian concerns:

➲ Similarly, India has raised concerns on issues such as Pakistan's blockade of the Fazilka drain, which resulted in water contamination in the border areas, referent to Article II Clause 3 and Article IV Clause 4 and 6 of the treaty.

➲ During the 117th bilateral meeting in March, Pakistan assured India of all possible actions to ensure the free flow of the Fazilka drain into the Sutlej.

➲ Notwithstanding the differences, both countries have so far endeavoured to amicably address all such issues with both sides assuring to implement the treaty in letter and spirit.

Lessons from the treaty:

➲ Although there are many outstanding issues, the treaty is important and many lessons can be drawn. The treaty is an illustration of a long-standing engagement between the conflicting nations that has stood the vagaries of time. It has withstood tensions, including conflict, providing a framework for cooperation.

➲ The treaty, therefore, is considered one of the oldest and the most effective examples of water management cooperation in the region and the world. The 118th bilateral meeting corroborates its effectiveness.

➲ With the exception of differences on a few pending issues, both countries have avoided any actions resulting in the aggravation of the conflict or acted in a manner causing conflict to resurface. The recent bilateral meeting points to mutual respect, communication and a sharing of information, despite differences.

Way Forward:

➲ The treaty can serve as an edifice to address the challenges of climate change. Recognising common interests and mutual benefits, India and Pakistan can undertake joint research on the rivers to study the impact of climate change for 'future cooperation' (underlined in Article VII).

➲ The Indus Waters Treaty also offers great potential for cooperation and development in the subcontinent which can go a long way in ensuring peace and stability.

➲ Given that both India and Pakistan have been committed to manage the rivers in a responsible manner, the Treaty can be a reference point to resolve other water-related issues in the region through regular dialogue and interaction.

THE GULF OF SENSITIVITY THAT INDIA WILL HAVE TO CROSS

Why in news?

➲ The strong and widespread targeting of India in the Islamic world over the past few days arose from a specific theological consideration.

➲ Recent comments made regarding Prophet Mohammed have cascaded into a multi-layered international incident.

➲ Islamic nations in the Middle East and beyond publicly condemned these views, and the Indian government distanced itself from the party functionaries in question.

The Gulf–India relations in recent years

➲ The rush to control the situation in India was palpable

➲ The Gulf and the extended West Asian region have gained significant strategic and economic importance in Indian foreign policy calculus over the past few years.

➲ Ironically, some of the most significant strides made between the region and India has been during the tenure of Prime Minister Narendra Modi.

➲ During this period, India's interests in the Gulf have gone beyond diaspora and oil, with economics, counterterrorism, defence, technology, and other critical aspects of international cooperation witnessing an important boost.

➲ This becomes even more impressive considering the significant political and ideological divides between the ruling Gulf monarchies and the Modi government.

➲ However, both sides have navigated these fissures on a government-to-government level well, up until now.

Communal discrepancies:

➲ Communal discrepancies in Indian society and politics are not new. However, neither is democratic discourse, remains a critical pillar of India's national design.

➲ India's ties with the Islamic world, particularly in the Persian Gulf, have navigated tectonic events such as the demolition of the Ayodhya Mosque in 1992, the Godhra riots in Gujarat in 2002, and so on with deft diplomacy from both sides taking charge, disallowing

relations to spiral and protecting mutually beneficial national interests despite the ideological and theological crevasses.

➲ Fast forward to the 2010s, a rapidly growing Indian economy helped in changing long-standing perceptions that drove Gulf's foreign policy towards India.

➲ This mutually beneficial reality would not have been possible, say in the 1990s, a time when counterterror cooperation was negligible, Gulf's affinity towards Pakistan, and its interests far superseded those of India, and persons of interest wanted in India for terrorism found refuge in the Gulf easily.

How pace of communication technologies in present time affects?

➲ The current diplomatic fallout over comments was not out of the blue. The rapid growth of the internet, social media and the pace of communication technologies have blurred lines between official governmental positioning on issues and events that are playing out on the ground.

➲ The diplomacy filter has limitations today, as control of official narratives and counter-narratives gets even more diluted as we move forward in a hyper-connected world. Government positioning means little if video and audio of events are directly available, and are shared via platforms, reaching thousands within minutes.

➲ In Gulf states, this is what happened, as the video of the spokespersons' comments on the Prophet spread rapidly with help of certain neighbouring states. India's response, via statements released by its embassies, eased diplomatic tensions, but a level of damage on a public level was already accomplished.

Status-quo breaking moment:

➲ Previous cases of anti-Muslim posts on social media, particularly by expats living in the region, had prompted sober yet notable responses from the Gulf states.

➲ Over the years, some Indians have even been deported from the United Arab Emirates (UAE) for posting hateful content online, and this was despite Indian embassies in the region asking its nationals working across this geography to be mindful of their online activities.

➲ However, Gulf nations did not escalate these beyond seeing them as aberrations, and not in light of their larger relations with India. However, this is an issue that needs attention, more so now than ever.

➲ The most damaging part here is that the status-quo breaking moment came from a party functionary, and not a member of the 'uninformed' public.

➲ The realisation that what is said domestically travels as much internationally, and the simple social arithmetic of words having consequences, should not

have been ignored within the designs of the party's communication apparatus.

➲ Commentary on the Prophet represents a red line in most parts of West Asia, which usually invokes responses from various quarters of the Islamic world. Communal violence by itself has rarely been picked up as a matter of bilateral tension by Gulf states with India, similar to them not picking up the issue of Xinjiang and Uyghur Muslims with China.

Conclusion

➲ The Gulf States by design are not accustomed to no-hold-barred debates on religion. Similar reactions have also come across following comments made in Europe and the US in the past as well. Much like examples from the past, this crisis as well is not expected to challenge the strong fundamentals of the civilizational foundations of India–Gulf relations.

➲ There is a mutuality of interests between the Arab states and India, and hence when the temperature cools, the flow of relations will go on. But India must take the obvious lessons from this entire episode, beginning with greater sensitivity to all faiths both for social harmony and promotions of India's external interests.

CROSS-VOTING AND DEFECTIONS IN FOCUS AGAIN

Why in news?

➲ The recent voting in the Rajya Sabha polls has brought the issues of cross-voting and defections practised by lawmakers into focus again.

➲ The lawmakers find some loopholes in the law and skirt around them. Parliament passed the anti-defection law in 1985. Despite the stringent anti-defection laws, cross-voting or floor crossing is going on.

Vice President on the anti-defection law:

➲ Vice President of India recently commented that the anti-defection law must be amended to rectify the loopholes.

- He said there was no clarity about the time frame for the Speaker or Chairman of the Rajya Sabha to decide on anti-defection cases.
- His comment is significant because elected representatives have been familiar with party-hopping tactics for decades.
- The defecting lawmakers have found a way to skirt the restrictions in the Tenth Schedule.
- Instead of formally "crossing the floor" or voting against their party in a confidence motion, they resign from the party.

'Ayaram, Gayaram" in Indian politics:

- In the past, there have been some bizarre cases. In 1967 when Haryana was carved out of Punjab, an independent MLA, Gayalal, first joined the Congress Party; by evening, he shifted to the United Front, and within nine hours, he re-joined the Congress party. Ironically, he returned to the United Front within a fortnight. This case is known as 'Ayaram, Gayaram' in political circles.
- The penalty for shifting political loyalties is the loss of membership and a bar on becoming a minister. The law has been contested in courts multiple times. It was amended in 2003.

Dissent:

- Another objection to the anti-defection law is the unlimited powers given to every political party to put down dissent or an alternative view.
- However, recent developments in many states show that it does not check defections. To keep the flock together, parties often play resort politics by shepherding them to some resort, sometimes outside the state.
- Defectors have shown this trend many times – Rajasthan (2020), Maharashtra (2019), Karnataka (2019 and 2018), and Tamil Nadu (2017).
- In March 2020, Jyotiraditya Scindia and 22 Congress MLAs resigned, resulting in a government change in Madhya Pradesh. In 2019 in Goa, 10 of the 15 Congress MLAs merged their legislature party with the BJP. In Rajasthan, six BSP MLAs merged their party with the Congress, and in Sikkim, 10 of the 15 MLAs of the Sikkim Democratic Front have joined the BJP. The list goes on.

Central flaw of anti-defection law's:

- Critics believe the anti-defection law's central flaw has been the presiding officers' full authority to decide on the petition.
- The law initially stated that the decision of the Presiding Officer is not subject to judicial review. The Supreme Court struck down this condition in 1992.
- The Apex court intervened again in July 2019 when ten Congress MLAs and two Maharashtrawadi Gomantak Party MLAs defected to the BJP and were rewarded with ministries. The court prescribed a maximum of three months for deciding on anti-defection cases in 2020.

How could the loopholes be plugged?

- In the past, expert committees have recommended that rather than the presiding officer, usually a ruling party member, the decision to disqualify a defector should be vested in an independent agency.
- However, political parties might oppose this change, mainly ruling parties at the Centre and in the states. With presiding officers in their hands, it would be easier to manipulate politically.

What Supreme Court has observed?

- In recent times the Supreme Court also observed, that it is time that Parliament has a rethink on whether disqualification petitions ought to entrusted to a Speaker as a quasi-judicial authority when such Speaker continues to belong to a particular political party either de jure or de facto.
- Parliament may seriously consider amending the Constitution to substitute the Speaker of the Lok Sabha and Legislative Assemblies as the arbiter of disputes concerning disqualification which arise under the Tenth Schedule.

Way Forward:

- There are apprehensions of cross-voting by MLAs and M.P.s who form the electorate in the Presidential polls. As long as givers and takers are there, defections will not stop. The best way is to tweak the law.
- There could be other punishments for an errant legislator. Resort politics should also be banned. Defectors should be barred from holding public office for a reasonable period, and the vote cast by a defector should be considered invalid. The electorate should also have a right to recall the representative.
- The mass exodus of MLAs from the vanquished Congress to winning parties shows no respect for the anti-defection law. What is needed is political will, and all parties should come together and look at the law afresh.

AFGHAN WOMEN'S RIGHTS ARE AT RISK

Why in news?

➲ Recently, Afghanistan's Interior Minister promised soon return of girls to secondary schools that have remained shut since March 2022.

➲ However, any euphoria about this could be misplaced given the number of regressive steps taken by the Taliban to curb women and girls' freedom since they took power in August 2021.

Taliban rule:

➲ The initial shock following the Taliban's seizure of power in Afghanistan is waning. The Taliban, who during the initial period of the takeover had demonstrated a bit of moderation to gain international acceptability, funding and recognition, have now started showing their true colours.

➲ Notwithstanding the U.S.-mediated 2020 peace deal, which seemed to erroneously pin hopes on a "reformed" Taliban to govern the country, many observers had issued warnings that the takeover of power by the Taliban would result in the loss of the fragile gains made in Afghanistan over the last two decades.

Opportunities for girls and women in Afghanistan:

➲ While there can be a debate over the gains made by the international community in Afghanistan in the last 20 years, it was unmistakable that opportunities for girls and women in education and employment had expanded vastly.

➲ Female participation in Afghanistan's labour force had climbed from around 15% in 2009 to nearly 22% in 2019. Women started playing important roles in the government, parliament, the media, the health and education sectors, and in civil society.

➲ They had carved space for themselves in conflict-ridden patriarchal structures and systems. Though the various interventions by the international community on women's issues did not transform the structures, they did provide opportunities for women to be enablers of change.

➲ In parliament, and in the provincial councils of Kandahar, Nangarhar, Badakhshan, Herat, Balkh and others, young women took grave risks in political participation and mobilisation.

Position of women after takeover by Taliban:

➲ Today, those voices are lost. A report from the International Labour Organization in January 2022 found that Afghan women's employment levels fell by an estimated 16% in the third quarter of 2021, compared with 6% for men.

➲ By mid-2022, women's employment is expected to be 21% lower than before the Taliban takeover, if current conditions continue. In a rush to reach out to the Taliban during the peace processes, protection of the rights of women were hardly emphasised as a red line.

➲ As fatigue towards the war developed within and outside the country, there were barely any concerted efforts in making women rights and human rights a non-negotiable part of the negotiations.

➲ The participation of a few Afghan women representatives in the intra-Afghan dialogue in Doha had raised expectations in the international community that the insurgents had reformed and would be willing to accept women's role in Afghan society and government. These hopes were, however, shattered.

A regressive mindset:

➲ Since the capture of power in Kabul, the Taliban have made a series of contradicting moves on the issue of return of women to public life. Initially they referred to the prevalence of chaos and insecurity and asked women to stay indoors.

➲ The Taliban's acting Prime Minister, Mullah Mohammad Hassan Akhund, claimed that women would be allowed to continue working under Sharia law, but female government employees in Kabul were then told to stay at home. Only women whose jobs cannot be performed by men were allowed to work.

➲ Subsequently, the regime brought in rules which forbade women from venturing out if they were not accompanied by a male relative. They issued a decree making an all-covering burqa mandatory for women.

Taliban 2.0:

➲ It is clear that Taliban 2.0 is in no way different from the Taliban that ruled the country between 1996 and 2001. The stories of a "reformed" and "moderate" Taliban, which were narrated by sections of the media, were naïve.

➲ The greatest impact of denial of rights for women in the workforce would be a sharp contraction in the economy. In addition to the loss of rights, many households run by women could be staring at a bleak future.

➲ As per the World Bank, in 2019, 36% of teachers in the country were women, the highest number for 20 years. But most female educators have been forced out of work by the Taliban's ban on education for girls in March 2022. By the end of 2021, fewer than 100 of Kabul's 700 female journalists were still working.

Way Forward:

➲ As the war in Ukraine has grabbed and retained international attention, Afghanistan seems to have been forgotten yet again. Occasionally, the plight of Afghan women and the Taliban's atrocities find mention in the media. The Taliban do not shy from leveraging the issue to gain international attention.

➲ The international community, therefore, needs to make a concerted and coordinated attempt to protect the rights of Afghan women and girls and ensure that Afghanistan's de facto rulers are held accountable for their actions.

TACKLING THE CRISIS OF RISING GLOBAL FOOD PRICES

Context:

➲ Global food prices are characterised by year-to-year volatility and periodic sharp spikes. While year-to-year volatility is easily managed by most countries through changes in their trade and domestic policies, it is steep and severe periodic price shocks that can lead to some sort of a crisis at the global and national levels.

➲ The crisis can emerge in the form of food shortages, trade disruptions, a rise and spread in hunger and poverty levels, a depletion of foreign exchange reserves for net food importing countries, a strain on a nation's fiscal resources due to an increase in spending on food safety nets, a threat to peace, and even social unrest in some places.

➲ Because of these widespread ramifications of food price shocks, it becomes imperative to understand the real causes of such shocks and devise effective mechanisms to deal with them.

Crises and history:

➲ Historical data on food prices compiled by international agencies such as the Food and Agriculture Organization of the United Nations, the World Bank/International Monetary Fund show that since the onset and the adoption of Green Revolution technology in the early 1960s, the world has been struck thrice by food price crises.

First food crisis (1973-76):

➲ The first shock was experienced during 1973-76 when the food price index (based on prices in U.S. dollars) doubled in nominal terms and increased by one third in real terms compared to the pre-shock average of four years.

➲ This shock moved up the nominal prices of commodities (including food) into a new trajectory. However, for the next two decades, food prices in real terms followed a declining trend and were at their lowest around 2002.

Food price crisis of 2008:

➲ After 2002, nominal as well as the real prices of food began rising; this momentum built up to culminate in the next food price crisis of 2008, which was further intensified by 2011.

➲ While the price shock began softening after 2014, food prices did not move back to their pre-2006 level.

Current food crisis:

➲ The lull in global food prices stayed for a short duration, from 2015 to 2019, and food prices again began moving above the trend by the third quarter of 2020. This time the increase in the food price index happened very quickly and it turned out to be very big, it has taken the food price index to its historically highest level.

Factors responsible for three food price crises:

➲ All the three food price crises during 1973-1976, 2007-12, and the recent one which began towards the end of 2020 have one thing in common, they were triggered by factors outside agriculture.

➲ They were not caused by any serious shortfall in agriculture production. Second, the interval between two consecutive price shocks has narrowed down considerably and the severity of shock is turning stronger.

The recent spike:

➲ The recent spike in food prices has been triggered by supply disruptions due to COVID-19 and further aggravated by the Russia-Ukraine war.

Global trade disruption:

➲ The current food price spike first began in vegetable oils and then expanded to cereals. The trade patterns of these commodities show that around 38% of the vegetable oil produced and consumed is globally traded. In the case of wheat, dependence on trade to meet global demand forms 25%, while only one tenth of rice output or consumption is traded.

➲ Trade dependence for maize is 16%. It is evident then that the effect of global trade disruption will be higher for commodities that are traded more and vice-versa.

Diversion of food for biofuel:

➲ Another factor underlying the rising trend and spikes in food prices is the diversion of food for biofuel needs.

The proportion of vegetable oil used for biodiesel increased from 1% in 2003 to 11% in 2011; it went up to more than 15% in 2021. This is further related to energy prices.

- When crude prices increase beyond a certain level it becomes economical to use oilseeds and grains for biodiesel and ethanol, respectively. The second reason for the use of food crops for biofuel is the mandates to increase the share of renewable energy resources.

Increase in the prices of fertilizer and other agrochemicals:

- Food prices are also expected to go up in the current and next harvest season because of an increase in the prices of fertilizer and other agrochemicals.
- The international price of fertilizer has increased by 150% between April 2021 and April 2022.

Implications for India:

- Export and import in the agriculture sector constituted 13% of gross value added in agriculture during 2020-21. Therefore, some transmission of an increase in global prices on domestic prices is inevitable. This transmission of global prices to the domestic market can be moderated through trade policy and other instruments.
- This is precisely what India has been doing to balance the interests of producers and consumers and in protecting the economy against excessive volatility in international prices. When international prices go too low, India has checks on cheap imports to protect the interests of producers; and when international prices go too high, the country liberalises imports and imposes checks on exports to ensure adequate availability and reasonable food prices for domestic consumers.
- The policy of having a buffer stock of food staples has also been very helpful in maintaining price stability especially in the wake of global food crises.
- Ongoing trends in domestic demand and supply imply that India will be required to dispose of 15% of its domestic food output in the overseas market by 2030. This is more than double the current ratio of export to output. This underscores the need to maintain India's image as a reliable and credible exporter. However, it is important to differentiate between the two situations: disturbing normal export and regulating exports exceeding the normal level.

Wheat export restrictions:

- The recent ban on wheat exports and restrictions on the export of other food commodities by India need to be seen in the light of an abnormal situation created by spikes in international prices.
- Some experts see it as a setback to India's image as a reliable exporter as this move is seen to disrupt (regular) export channels. A closer examination of data reveals that India's action to ban or restrict food exports is not disrupting its normal exports.
- India was a very small exporter of wheat, with its share in global wheat trade ranging between 0.1% to 1% during 2015-16 to 2020-21. Despite the ban, the export of wheat this year will be much higher than the average wheat export from India in recent years.

How wheat restriction by India connected to India's food security?

- The international market is looking for around 50 million tonnes of wheat to compensate for the disruption in wheat exports from Russia and Ukraine. This is close to half the wheat production in the country and more than two-thirds of the wheat that comes to the market.
- If India had not imposed a ban on wheat export, it would have resulted in a severe shortage of wheat within the country. No responsible country would jeopardise its own food security by allowing excess exports.
- India should continue with a policy of strategic liberalisation, as followed in the past, to balance the interests of producers and consumers. The policy of buffer stock has also been very helpful in maintaining price stability in the face of global price shocks.

Global impact:

- The Green Revolution technology which spread in developing countries from the 1970s to the 1990s helped in keeping food prices low and relatively stable. As the steam of Green Revolution technology slowed down with the start of the 21st century, food prices began increasing in real terms. At the same time, the resilience of the food sector against price shocks has also weakened.
- The world requires new breakthroughs such as Green Revolution technology, for large-scale adoption in order to enable checks on food prices rising at a faster rate. This in turn requires increased spending on agriculture research and development (especially by the public sector and multilateral development agencies).
- There is a need to strengthen and rejuvenate the global agri-research system under the Consultative Group on International Agricultural Research (CGIAR) which is heading towards disarray.
- Biofuel protocols have contributed to the global food crisis for the second time in the last 15 years. Diversion of land under food crops and food output for biofuel should be carefully calibrated with implications for food availability. In most cases it requires serious rethink.

Way Forward:

- The last three food price crises were primarily caused due to an increase in energy prices and disruptions in the movement of food across borders.

- Factors related to climate change are going to be an additional source of supply shocks in the years ahead. Therefore, the global community must plan to have a global buffer stock of food in order to ensure reasonable stability in food prices and supply.
- The situation requires coordinated and timely action by the global community.

THE WAY TO END CHILD MARRIAGE

Context:
- Earlier, to bring women on equal footing with men, Prime Minister has decided to raise the legal age of marriage of women to 21 from 18 years.
- The increase in age of marriage is claimed to bring substantive benefits at the individual and societal levels. This can be examined using data from the recently released National Family Health Survey-5 (NFHS-5), 2019-2021.

Structural factors:
- Several empirical studies from South Asia establish a significant association between early marriage and adverse health and educational outcomes of women and their children.
- Specifically, studies associate early marriage of women with early pregnancy, lower likelihood of accessing ante-natal care, higher risks of maternal morbidity and mortality, poor nutritional status of women and poor nutritional and educational outcomes of children.
- These studies seem to provide a rather compelling case for increasing the age of marriage of women from 18 to 21 years, as a delayed marriage might offer significant public health dividends.

How social norms are associated between child marriage and adverse health outcomes?
- But a closer reading of the evidence shows that the association between child marriage and adverse health outcomes does not emerge in a vacuum. Rather, it is abetted by structural factors, including social norms, poverty, and women's education.
- It is because of social norms in many regions and cultures that parents begin preparations for a girl's marriage once she has reached menarche. Equally, a large proportion of child marriages take place primarily because of poverty and the burden of the huge costs of dowry associated with delayed marriages.

- These factors curtail a girl's opportunities to continue her education. And in turn, the lack of educational opportunities plays an important role in facilitating child marriage.

Does a woman's age at marriage matter in itself, independent of education or poverty?
- It is in this context that the NFHS-5 data become salient. NFHS-5 data show that about 25% of women aged 18-29 years married before the legal marriageable age of 18. The proportion has declined only marginally from NFHS-4 (28%).
- Expectedly, the prevalence is higher in rural than urban India (28% and 17%, respectively). West Bengal has the highest prevalence (42%), followed by Bihar and Tripura (40% each).
- Oddly, the decline in child marriage has been paltry at best in these high-prevalence States. At the other end of the spectrum are Goa, Himachal Pradesh and Kerala (6% to 7%).

Education outcomes:
- If the data community-wise is looked, 39% of child marriages in India take place among Adivasis and Dalits. The share of advantaged social groups is 17% and the remaining share is of Other Backward Classes.
- In terms of household wealth, 58% of these marriages take place among the poorest wealth groups (bottom 40%), about 40% of them take place among the middle 50% and only 2% of them take place among the top 10% of wealth groups. Only 4% of child marriages in India take place among women who have completed more than 12 years of education.
- Thus, the data confirm that a significant proportion of child marriages takes place among women with less than 12 years of schooling and households that are socially and economically disadvantaged.
- Since child marriage is substantially lower among women with a higher level of schooling, it would be interesting to know whether an increase in years of schooling necessarily increases the age at marriage. Expectedly, the average age at marriage increases from 17 years among women who are illiterate and have had up to five years of schooling to 22 years among women who have had more than 12 years of schooling.
- This indicates that an increase in years of schooling goes hand in hand with an increase in age at marriage. While an increase in education is most likely to delay marriage, the increase in age at marriage may or may not increase women's education.

Since the Prohibition of Child Marriage (Amendment) Bill, 2021, fixes 21 years as the marriageable age for women, let's examine whether a mere increase in age at marriage without an increase in education bestows women with better nutritional outcomes?

➲ While 27% of illiterate women who married before 18 years are underweight (Body Mass Index below 18.5), the proportion is 24% for illiterate women who married at the age of 21 years. A high proportion (64%) of illiterate women are anaemic, in terms of iron deficiency, irrespective of their difference in age at marriage.

➲ In terms of the gap between marriage and first pregnancy, it is surprisingly 2.5 years among the former and 1.6 years among the latter. However, the former give birth to a higher number of children (2.4), on average, than the latter (1.4).

➲ Women with 12 years of schooling married before 18 years and at 21 years have hardly any difference in underweight prevalence (14% and 13%, respectively). In iron deficiency anaemia, the prevalence is only marginally higher (54%) among the former than the latter (50%).

➲ The gap between marriage and first pregnancy is higher among the former (2.6 years) than among the latter (1.7 years), though the latter have fewer number of children (1 child on average) than the former (1.6).

➲ A cross comparison between women who have had more than 12 years of schooling but were married before 18 years and women with secondary education but married at 21 years also underlines the importance of education. While underweight prevalence is almost equal among both, anaemia is marginally higher among the latter. The broad pattern emerges in other indicators as well.

Conclusion:

➲ To sum up, the health dividend emanating from women's increased age at marriage is not imminent. Increasing the age of marriage without a commensurate improvement in women's education is least likely to yield better health and nutritional outcomes.

➲ Instead, it might adversely impact the poor and illiterate. The fact that about one-fourth of women (18-29 years) in India have married before 18 years despite the law tells us that legally increasing the age of marriage may not fully prevent child marriages. By contrast, much of the benefits can be reaped by ensuring that women complete education at least up to 12 years.

➲ The case of Bangladesh shows that improving women's education and imparting modern skills to them that increase their employability reduces child marriage and improves health and nutrition.

➲ Also, schemes which ease the financial burden of marriage but the eligibility criteria of which should essentially link to educational attainment in addition to age demand attention. The lessons from Janani Suraksha Yojana and the zeal demonstrated in ending open defecation might provide valid insights here.

Way Forward:

➲ Educating women is important for their personal freedom, social wellbeing and contributes to human development. A legalistic approach to increasing the age at marriage will produce positive results only if it leads to an improvement in women's education and skill acquisition for employability.

➲ In the absence of an enhancement in women's schooling or skills, a legalistic approach to ending child marriage might become counterproductive.

SRI LANKAN CRISIS & ECONOMIC OPPORTUNITY

Context:

➲ Recently, the Sri Lankan Prime Minister, touched upon a less-emphasised yet significant aspect of India-Sri Lanka relations, the commonality between Sri Lanka and the southern parts of India.

➲ This was not the first time that he has talked of forging closer ties between his country and south India.

The sub-regional integration:

➲ During his second term as Prime Minister, in August 2003, called for the development of the south India-Sri Lanka sub-region as a single market that would provide more opportunities for the economic growth of both countries.

➲ In 2016, addressing the South Asian Diaspora Convention in Singapore, he highlighted the fact that the five Indian southern States, with a total population of 250 million, had a combined gross state domestic product of nearly $450 billion; with the addition of Sri Lanka's $80 billion GDP, the sub-region would have a $500 billion economy, having an aggregate population of around 270 million.

➲ He had even referred to the tri-nation economic convergence, encompassing Singapore too.

➲ His latest observations should be viewed in the context of his idea of sub-regional integration.

Current Economic crisis in Sri Lanka:

➲ The present economic crisis in Sri Lanka has pushed it closer to India for immediate relief. For the last

few months, the Indian media's regular coverage of the crisis has led to better understanding and even created a sense of empathy in India about the plight of the neighbouring country.

➲ India, as part of its 'Neighbourhood First' policy, has extended support to the people of Sri Lanka in the form of aid (close to $3.5 billion) to help secure Sri Lanka's food, health and energy security by supplying it essential items such as food, medicines, fuel and kerosene.

Financial aid from India:

➲ The latest in the series was the signing of an agreement on June 10 between the Government of Sri Lanka and the Export-Import Bank of India for a $55-million short term Line of Credit to facilitate the procurement of urea for paddy crop in the ongoing 'Yala' season.

➲ During her discussions with the International Monetary Fund in April, India's Finance Minister urged the multilateral agency to provide urgent assistance to Sri Lanka.

➲ On its part, Tamil Nadu decided to provide aid of ₹123 crore, comprising 40,000 tonnes of rice, 137 types of life-saving drugs and 500 tonnes of milk powder.

Bitter episodes in India-Sri Lankan history:

➲ Whether this bonhomie can lead to greater economic collaboration between Sri Lanka and south India, not necessarily Tamil Nadu alone, given the historical baggage, is anybody's guess.

➲ Some sections of the Sinhalese still hold the view that "India has been a threat to us. It can be a threat to us in future too".

➲ This perception can be traced to history when Sri Lanka was invaded by rulers of south India who humbled the Sinhala kings. In the aftermath of the 1983 anti-Tamil pogrom, the support provided by the Indian government to Tamil rebels only strengthened this perception.

➲ Bitter episodes of the past involving the two countries were recalled when the Indian consignments of essential commodities reached Sri Lanka.

Cancellation of tripartite agreement in 2021:

➲ Despite India's open willingness to take part in the development of Sri Lanka after the civil war, the scale of its involvement has been modest.

➲ The manner in which the Rajapaksa regime unilaterally scrapped in February 2021 a tripartite agreement signed in 2019 with India and Japan for the development of Colombo's East Container Terminal was a reflection of the historical baggage, though the official reason cited was opposition from workers' unions.

➲ Even though India was later provided with projects such as the West Container Terminal, the Trincomalee oil tank farm and a couple of renewable projects,

there were several proposals that envisaged India's participation but did not see the light of day.

Halted projects which needs India's participation:

➲ Another project, a collaboration between NTPC Limited and the Ceylon Electricity Board, was cancelled just when bids were to be floated for the coal-fired 500-megawatt project in Sampur in the Eastern Province (after obtaining environmental clearance).

➲ Other projects too such as the development of the Kankesanthurai harbour and the expansion of the Palaly airport in Jaffna, both envisaging Indian participation, would have become a reality had there been show of political will from the other side.

➲ Recently, the Sri Lankan Cabinet was reported to have cleared two connectivity proposals: flights from Jaffna to Tiruchi, Tamil Nadu, and a ferry service from Kankesanthurai to Karaikal in Puducherry. The project of building a sea bridge and tunnel, connecting Rameshwaram to Talaimannar, remains on paper despite India's Road Transport and Highways Minister Nitin Gadkari informing the Lok Sabha in December 2015 of the Asian Development Bank's readiness to fund it.

Infrastructure development:

➲ Even now, there is enormous scope for collaboration between the two countries in the area of infrastructure development. The economic crisis has revived talk of linking Sri Lanka's electricity grid with that of India.

➲ If this project takes off, the first point of interconnectivity on the Indian side will most likely be in Tamil Nadu. India has cross-border energy trade with Bangladesh, Nepal, Bhutan and Myanmar.

➲ India's interests would also be served by developing the east coast of Sri Lanka, especially the Trincomalee-Batticaloa belt, whose potential for tourism, commerce, trade and industry is well known.

➲ At an appropriate time, regular movement of people and goods should be allowed again on the traditional sea routes of Thoothukudi-Colombo and Rameshwaram-Talaimannar.

Way Forward:

➲ The apprehension in the minds of sections of the Sinhalese majority about India being a threat can be dispelled only by facilitating greater people-to-people interaction, including pilgrimages by monks and other sections of Sri Lankan society to places of Buddhist importance not only in north India but also in the south (Andhra Pradesh).

➲ Much more will have to be done but the opportunity created by the current circumstances should be utilised to bring Indian and Sri Lankan societies closer, a prerequisite to achieving an economic union between Sri Lanka and the southern States of India.

THE AGNIPATH SCHEME FOR ARMED FORCES

Why in news?

⮥ In a "transformative" military recruitment reform, the Centre has announced the Agnipath scheme for recruitment of soldiers in the three branches of the armed forces, on a short-term basis.

⮥ Under the scheme, youth between 17.5 to 21 years of age will be enrolled on an 'All-India All-Class' basis as soldiers for four years.

⮥ These recruits, who will be known as 'Agniveers', will form a distinct rank bearing a distinct insignia in the respective forces. They will not be eligible for any pensionary benefit under the scheme.

⮥ With this, the existing framework of employment for soldiers will cease to exist and those below officer rank will be recruited into the three services through the Agnipath scheme.

⮥ The scheme does not apply to defence officers for whom there is a provision of short-term service called the Short Service Commission or SSC.

What are the features of the new scheme?

⮥ Aimed at reducing salaries and pensions to divert resources for military modernisation, the idea of a short-term recruitment model or 'Tour of Duty' (ToD) was first mooted around two years back for the selection of officers and jawans, for a limited number of vacancies.

Eligibility and recruitment:

⮥ As part of the Agnipath scheme, selected candidates will be enrolled under the respective Service Acts for four years. Those between the ages 17.5 and 21 years will be eligible to apply.

⮥ Candidates below 18 years of age will have to get their enrolment forms signed by their parents or guardians. Medical and physical fitness standards will continue in accordance with existing norms for different categories and trades in the military.

⮥ The required educational qualification will be Class 10-12, depending on the service and assigned role. For instance, the educational qualification required for entry into General Duty soldier is Class 10.

⮥ In 2022, the Centre will recruit 46,000 Agniveers and the induction process will repeat every six months.

Training:

⮥ Agniveers will undergo military training in existing training centres as per the requirements of the service they join and the role they are assigned.

⮥ The training will go on for a maximum of six months, post which an Agniveer will be deployed for the remaining three and a half years.

⮥ The trained Agniveers will be capable of being deployed on the borders with Pakistan and China.

Selection process:

⮥ An online centralised system will be used for enrolment of Agniveers with specialised rallies, and campus interviews from technical institutes like industrial training institutes (ITIs).

⮥ The selection will be the exclusive jurisdiction of the armed forces.

Year	Customised Package (Monthly)	In Hand (70%)	Contribution to Agniveers Corpus Fund (30%)	Contribution to Corpus fund by GoI
All Figures in Rs. (Monthly Contribution)				
1st Year	30000	21000	9000	9000
2nd Year	33000	23100	9900	9900
3rd Year	36500	25550	10950	10950
4th Year	40000	28000	12000	12000
All Figures in Rs. (Monthly Contribution)				
Total Contribution in Agniveers Corpus Fund After four years			₹ 5.02 Lakh	₹ 5.02 Lakh
Exit after 4 year	₹ 10.04 Lakhs as Seve Nidhi Package (absolute amount excluding interest)			

Permanent enrolment

⮥ After four years of service are completed, Agniveers will be eligible to apply for permanent enrolment in the armed forces.

⮥ Up to 25% of them will be selected on an objective basis and enrolled as regular cadre. They will have to serve for a further minimum of 15 years and their salary will be revised to that of a regular soldier.

⮥ For these selected soldiers, existing terms of the service of Junior Commissioned Officers/Other Ranks (OR) in the Army and their equivalent in the other two forces will apply.

⮥ Adequate re-employment opportunities will be created for the rest 75% who will move out of the services and return to society.

⮥ States such as Haryana, Uttar Pradesh, and Madhya Pradesh have announced that Agniveers will be given preference in police recruitments.

What benefits will be extended to Agniveers?

Salary

⮥ In the first year of enrolment under the Agnipath scheme, an Agniveer will get a monthly salary of ₹30,000, which translates to an annual package of ₹4.76 lakh.

⮥ The in-hand amount is estimated around ₹21,000. The remaining ₹9,000 will go to a corpus with an equal contribution from the government. In the second

and third year of their service, an Agniveer will get ₹33,000 and ₹36,500 per month, respectively and ₹40,000 in the final year.

➲ In addition to monthly salary, these recruits will be paid allowances for travel and uniform. They will also be entitled to honours, and awards as per existing guidelines.

Seva Nidhi:

➲ There will, however, be no pension or gratuity benefits for these recruits. Agniveers will contribute 30% of their salaries to a package called 'Seva Nidhi', and this amount will be matched by the government.

➲ This fund will accrue interest, and at the end of the four years, each soldier will get ₹11.71 lakh as a lump sum tax-free amount, which includes interest accumulated on the absolute amount of ₹10.04 lakh.

➲ During service, an Agniveer will be entitled to avail medical facilities at service hospitals, along with canteen facilities. An Agniveer will be granted 30-day annual leave while sick leave will be based on medical advice.

Life Insurance:

➲ The Agniveers will also be provided non-contributory life insurance cover of ₹48 lakh during their service in the armed forces.

In case of death/disability:

➲ In case of death during service, the next of kin of the deceased Agniveer will get insurance money, one-time ex gratia payment of ₹44 lakh, full pay for the unserved period along with the balance amount in the soldier's Seva Nidhi fund and government contribution and interest accrued in the Agniveer Corpus Fund which amounts to over ₹1 crore.

➲ In case an Agniveer suffers a disability attributable or aggravated due to conditions of engagement, a provision of up to ₹44 lakh based on the percentage of disability, apart from full pay for the unserved period will be given. The soldier will also be given the balance amount in the Seva Nidhi fund and the Centre's contribution from the Agniveer Corpus Fund.

Skill certificate:

➲ In addition, Agniveers will get skill certificates, awards of credits so that they can study further, and a financial package to support future endeavours after their short-term military service.

Can an Agniveer leave service at any time?

➲ No. An Agniveer will not be permitted to leave the service before completing the engagement period except in exceptional cases, with approval of the Competent Authority.

Concerns over Agnipath scheme:

Impact on the capabilities of the defence services:

➲ Several defence experts, have raised concern over the Agnipath model and the future of Agniveers,

asking the Government to fix gaps, which could have an adverse impact on the capabilities of the defence services.

➲ They point out that the reform is primarily being introduced to slash the growing salary and pension bills of the three services. Safeguarding national security should be of paramount importance for the Government.

Militarization of society:

➲ It will also lead to Militarization of society, nearly 40,000 (75%) youth year on year back rejected & dejected without a job, semi trained in arms ex Agniveers.

Employability of the 75%:

➲ Concerns have also been raised about the employability of the 75% who will return to the civil world after serving for four years in the armed forces.

➲ However, the Union Ministry of Home Affairs announced that the youth recruited under the Agnipath scheme will get priority in recruitment to the Central Armed Police Forces (CAPF) and Assam Rifles.

A 'MAN'S PARLIAMENT' STRIVING FOR AN INCLUSIVE INDIA

Context:

➲ After 75 years of Independence and 'Azadi ka Amrit Mahotsav' question of women's representation in Lok Sabha is still not answered.

➲ In 1952, when the Indian Republic held its first Parliamentary session, 39 women leaders were there challenging a centuries-old tide of men's dominance over the polity.

Achievement in the initial years:

➲ At a time when women formed only 1.7% of the total members of the United States Congress and 1.1% of the Parliament of the United Kingdom, India was leading the way in the fight towards more inclusive world democracies with 5.5% women representation.

➲ The struggle for India's Independence can never be detached from the contributions of thousands of women across profession, class, caste, and religion.

➲ A testament to their invaluable contribution has to be their louder voice in parliamentary democracy; what happened in 1952 was a highly progressive step, but 70 years hence, it seems to have strayed from that path.

➲ Due to systemic issues, Parliament continues to alienate women. The number of women representatives is still considerably small, but even more subtly, Parliament as a workspace continues to be built exclusively for men.

Gender inclusivity:

➲ The Supreme Court judgment (National Legal Services Authority vs Union of India, 2014) on gender identity has given the movement greater impetus.

➲ In solidarity, citizens have begun asserting their gender identity by specifying their personal pronouns (she/her, he/his, they/them, etc.).

➲ Parliament, being the pinnacle of law-making and the symbolic centre of our democratic aspirations, must reflect this change too. However, the matter seems to have largely escaped the notice of the Legislature.

Absence of gender neutral language:

➲ A closer look at parliamentary discourse and communication reveals a concerning and disconcerting absence of gender-neutral language. For instance, Parliament often refers to women in leadership positions as Chairmen and party men.

➲ In the Rajya Sabha, the Rules of Procedure continue to refer to the Vice-President of India as the ex-officio Chairman, stemming from the lack of gender-neutral language in the Constitution of India.

➲ Additionally, references to inherently masculine pronouns are made over 150 times in the former and 600 times in the latter. The alarming degree of usage of masculine pronouns assumes a power structure biased towards men.

➲ This tends to manifest itself in parliamentary debates, for instance, when a senior woman MP from Tamil Nadu was referred to as "Chairman madam" in the Lok Sabha in 2021 winter session.

Need for Gender-neutral Acts:

➲ In its present state, the Constitution reinforces historical stereotypes that women and transgender people cannot be in leadership positions, such as the President and the Vice-President of India, the Speaker of the Lok Sabha, the Governor of States, or a judge.

➲ It is not a criticism of the Constitution but of the failure of the many Union Governments which did not take the initiative of amending it. In the past, amendments have been brought about to make documents gender neutral.

➲ In 2014, under the leadership of the then Speaker of the Lok Sabha, Meira Kumar, the Rules of Procedure of the Lok Sabha were made entirely gender neutral. Since then, each Lok Sabha Committee Head has been referred to as Chairperson in all documents.

➲ This initiative is proof that amending legal documents to make them inclusive for all genders is an attainable goal if there is a will.

Gender-neutrality in other countries

➲ Internationally, even mature democracies that legalised universal suffrage after India, such as Canada (1960 for Aboriginal women), Australia (1962 for Indigenous women), and the United States (1965 for women of African-American descent), have now taken concrete measures towards gender-inclusive legislation and communication.

➲ Canada's Department of Justice has guidelines for using gender-neutral language in all forms of legislation and legal documentation; the Australian government has incorporated gender-neutrality in its drafting Style Manual; the U.K.'s House of Commons declared in 2007 that all laws would be drafted gender-neutrally.

➲ When Parliament and government offices reinforce gender biases in their communication, stereotypical language in reference to women and transgender people becomes more palatable to the rest of the country.

➲ The country's leaders must send the right message for citizens to follow. They can and must begin with an amendment to the Constitution and the entire reservoir of laws.

Aspiration

➲ Once the language is corrected, the entire country, including Parliament, can focus on the deeper issues of the aspirations and growth of its woman workforce.

➲ In 2018, the U.K. Parliament conducted a gender audit to understand its culture, environment, and policies as a workspace.

➲ If the report is any indication as to what might also be the scenario in the Indian Parliament, with an even lesser number of women employees, it opens questions about whether there is a single, transparent appointment and promotion process for women staff in Parliament, and whether their professional growth is being hindered by other issues such as harassment and domestic responsibilities.

Way Forward

➲ Recognition and correction of past errors through amendments to rulebooks, laws, and the Constitution are just starting points, and must lead to sensitivity, equal treatment, and appreciation for the people of India, regardless of gender.

MARINE HEATWAVE FUELLED SUPER CYCLONE AMPHAN

Why in news?

➲ Recently, a first of its king study was conducted in the Indian Ocean that investigates the interaction between a marine heatwave and super cyclone Amphan in the Bay of Bengal in May 2020.

➲ The co-occurrence of multiple extreme events (e.g. in this case the co-occurring marine heatwave and tropical cyclone) are termed compound extreme events.

Global warming:

➲ Rising greenhouse gas emission is the primary factor for anthropogenic (human-induced) climate change.

➲ The increase in carbon dioxide concentration can trap the radiation into the atmosphere and not let it go into space. This trapping of the extra energy increases the average surface air temperature and warms the climate that is known as global warming.
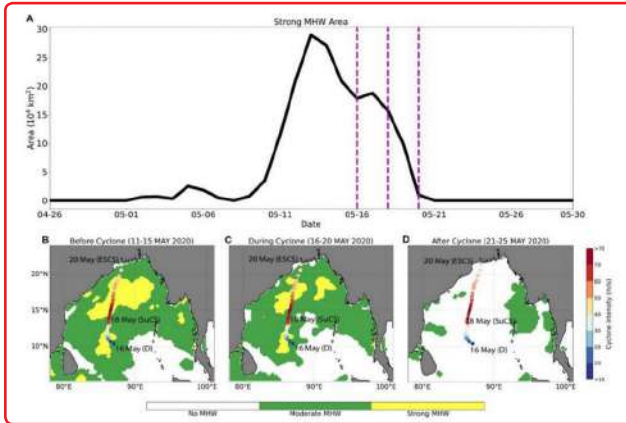
How GHG are responsible for warming of oceans?

➲ As the capacity of the atmosphere to absorb the heat is very less, more than 90% of the extra heat that has been trapped in the climate system has been absorbed by the oceans since 1970, according to IPCC AR5, and IPCC AR6 reports.

➲ Due to this, oceans are warming globally from the surface to deeper depths.

➲ The warming of the oceans has severe consequences such as increasing intensity and frequency of extreme events, rising sea levels, melting glaciers, and changing the weather pattern across the globe.

Marine Heatwaves (MHWs) in Indian Ocean:

➲ Previous studies have shown that due to global warming, the tropical Indian Ocean, at the surface, is warming at a faster rate as compared to the rest of the global ocean.

➲ The high sea surface temperatures are more susceptible to generating extreme temperature conditions that persist over days to months and are termed as Marine Heatwaves (MHWs).

➲ This intense warming of the ocean due to MHW has severe socio-economic consequences such as fish mortality, and coral bleaching, and also has the potential to interact and modify other extreme events such as tropical cyclones.

➲ The anthropogenic warming of the oceans and atmosphere facilitates the generation and intensification of extreme events such as MHWs and tropical cyclones. Both marine heat waves and

tropical cyclones are the extreme events of the ocean-atmosphere coupled system.

Tropical cyclones in Bay of Bengal:

➲ The Bay of Bengal exhibits high sea surface temperatures (about 28°C) throughout the year and is more prone to tropical cyclones.

➲ The Bay of Bengal is home to about 5-7% of the total number of tropical cyclones occurring globally each year and this makes the North Indian Ocean vulnerable to the highest number of fatalities globally.

Super cyclone Amphan:

➲ Amphan was the first super cyclone in the Bay of Bengal in the last 21 years and intensified from category 1 (cyclonic storm) to category 5 (super cyclone) in less than 24 hours.

➲ Amphan was also the costliest tropical cyclone on record in the North Indian Ocean, with reported economic losses of approximately $14 billion in India, according to the World Meteorological Organisation and 129 casualties across India and Bangladesh.

➲ According to the latest IPCC report (AR6), Amphan was the largest source of displacement in 2020, with 2.4 million displacements in India alone, out of which around 8,00,000 was pre-emptive evacuation by the authorities.

➲ The study investigates the reasons that made this unusual and unprecedented rapid intensification of cyclone Amphan into a devastating super cyclonic storm.

Key findings:

➲ They found the presence of a strong MHW beneath the track of the cyclone with an extremely high anomalous sea surface temperature of more than 2.5°C that coincided with the cyclone track and facilitated its rapid intensification in a short period.

➲ They have also compared the super cyclone Amphan to a previous extremely severe cyclone Fani in May 2019 with a near similar trajectory. The total life span of Amphan over the ocean was five days as compared to Fani which was for seven days but Fani did not turn into a super cyclone as Amphan did.

➲ The main difference between these two cyclones was the presence of MHW in the case of Amphan, which was not there in the case of Fani.

➲ Despite short duration and unfavourable atmospheric conditions relative to Fani, Amphan turned into a super cyclone, primarily fuelled by a strong MHW on its way.

➲ Apart from the surface warming, the study also shows that ocean stratification and warming below the surface also play a crucial role during this phenomenon of compound extreme events.

Way Forward:

➲ The study along with previous studies also discusses that such compound or individual extreme events are

going to increase in the future due to global warming and the Indian Ocean will witness the increased intensity and frequency of such climate extremes.

➲ Hence, it provides new perspectives on the interactions between different extreme events that could aid in improving the current understanding of compound extreme events that have severe socio-economic consequences in affected countries.

THE EPI MAY RANKLE BUT INDIA CAN RECAST POLICIES

Why in news?

➲ Recently, the latest Environmental Performance Index (EPI) placing India last among all 180 assessed countries was dejected by India.

➲ The assessment, carried out by Yale and Columbia Universities with an emphasis on climate change mitigation, has become controversial for prioritising the flow of greenhouse gases from countries while reducing the emphasis on the stock of carbon dioxide from industrialised countries that is warming the globe.

➲ Evidently, if countries were assigned a penalty for the stock of CO2 in the atmosphere, rather than measure their mitigation actions over a decade, India would fare much better.

➲ Less controversially, the EPI dwells on performance on air quality, waste management and ecological conservation measures.

Government's response:

➲ The EPI ranking and scores have been rejected by the Union Government as based on "unfounded assumptions", "surmises" and "unscientific methods."

➲ The national rank of 165 on Climate Policy and score of 21.7 in this category which overall has a 38% weightage in the calculations along with 42% for Ecosystem Vitality and 20% for Environmental Health has particular significance.

➲ India is under pressure to raise its ambition and commitment towards the more ambitious 1.5° Centigrade goal for temperature rise under the Paris Agreement, going beyond the less rigorous target of well below 2°C.

Projected greenhouse gas (GHG) emissions:

➲ Within the overall climate score, India does better in sub-metrics such as growth rates for black carbon, methane and fluorinated gases, and greenhouse gas emissions based on their intensity and per capita volumes.

➲ The Index rates the country low on projected green house gas (GHG) emissions for mid-century, a target for Net Zero emissions.

➲ The EPI report estimates that China, India, the United States, and Russia are expected to account for over 50% of global residual greenhouse gas emissions by 2050.

➲ This projection has met with strong protest from India, which has faulted the EPI for introducing a new metric on climate with increased weight in the calculation compared to the 2020 assessment.

➲ It stands accused of ignoring the important tenet of equity in global climate policy within the United Nations framework: that India has low per capita GHG emissions, reduced intensity of GHG emissions in its economy, made big strides achieving 40% renewable power generation, supported electric vehicles, launched a major carbon sink initiative, and done a lot for wetland conservation.

Claims and low Protected Areas Representativeness Index (PARI) :

➲ The country has protested that the new India State of Forest Report (ISFR) 2021 was not factored in as part of the biodiversity metric.

➲ On the face of it, India scores abysmally low on some of the Ecosystem Vitality variables, such as Marine Protected Areas (0.3 of a possible 100) and Protected Areas Representativeness Index, or PARI (0.5), Terrestrial Biome Protection (TBM) – National (1.2) and TBM – Global (2.1).

➲ Wetland loss prevention is among the best scores for India, at 62. Given the many biomes that exist in the country, the low PARI score puts pressure on the Government to defend its claim that the EPI scores for biodiversity health are faulty due to weaknesses in collecting species and habitat data.

➲ The ISFR, on which the Union government relies, ran into trouble for making spectacular claims, because of perceived methodological weaknesses.

➲ It is faulted for relying on a relaxed definition of forest and claiming expansion of forests when satellite imagery of the same areas showed a decline.

➲ The palm trees in private plantations in Tamil Nadu, tea estates in several States and even urban tree agglomerations were found added as forest.

Biome protection, air quality:

➲ The EPI-assigned rating for India in protecting biomes has led to sharp differences too.

➲ The Index assigns a 'laggard' rank on tropical and subtropical dry broadleaf and coniferous forests, montane grasslands and shrublands and the worst performance on deserts and xeric shrublands.

➲ The Government's defence is that national and legal boundaries for protected areas may not match geographical boundaries of biomes, and international classifications may not be optimal to measure conservation.

Air quality:

➲ A second sensitive area in which India brings up the rear in the EPI is air quality. With a score of 7.8 and a rank of 179, the familiar dispute over data and reliability of several parameters has reopened.

- The Government faults the dataset on pollutant concentration data covering mainly Particulate Matter (PM2.5), Oxides of Nitrogen, Sulphur Dioxide and Volatile Organic Compounds, because of "higher uncertainty in regions with less extensive monitoring networks and emissions inventories".
- Although the scores and rank could be contested, there is little doubt that India's air is widely seen as among the foulest. Data for 2019, when economic activity was unfettered by COVID-19, attribute 1.67 million deaths during the year from air pollution.

Green goals:

- The national case would be stronger if policies on luxury urban emissions are aimed at helping poorer Indians. On transport (about 13% of emissions), prevailing high fuel and vehicular taxes could exclusively drive change and raise a green commons such as clean public transport, cycling and pedestrianisation.
- The national policy of achieving Net Zero emissions by 2070 provides a longer timeline for a coal phase out, but other areas can benefit from policies that prevent a carbon lock-in effect.
- Emissions from buildings, including embedded carbon in construction materials such as cement and steel, provide scope for reduction.
- India has also not expanded disaggregated rooftop solar power across residential deployments and commercial structures.
- There cannot also be excessive reliance on carbon sinks in the short term, since tree cover of the right kind takes time to store carbon. Stronger protection for biomes (protected areas represent about 5% of the land) can generate wide-ranging benefits and biodiversity can recover.

Way Forward:

- What India needs to adopt is a rigorous dashboard approach to indicators, assigning high weight to the environment, modelled on the proposal made by Amartya Sen, Joseph Stiglitz and Jean-Paul Fitoussi in their exploration of development beyond GDP.
- This can generate good data, identify the real beneficiaries of policies, avoid serious environmental deficits and ensure inter-generational equity in the use of natural resources. It can also curb pollution. Distorted rankings from external assessments would matter little.

INTERNATIONAL TREATY ON COMBATING CYBERCRIME & SECTION 66A IN INDIA

Context:

- Section 66A of the Information Technology Act, 2000, which the Supreme Court had declared unconstitutional in 2015 in Shreya Singhal v. Union of India for having a "chilling effect on free speech", is back in the news.

- As part of the ongoing negotiations at the United Nations for a proposed international treaty on combating cybercrime, India made a formal submission for criminalising "offensive messages".
- The language in the submission is similar to what was used in Section 66A.

Concerns:

- Many contend that this amounts to a 'backdoor' attempt at legislation that is, if India's submission becomes part of the proposed treaty, it would result in Section 66A springing back to life and being used by the state to curb free speech once again.

Is international treaty binding?

- First, international treaty negotiations are complex. It is premature to believe that India's suggestion of criminalising "offensive messages" will be readily accepted.
- The U.K. and many countries in the European Union have reportedly already contested India's submission because they see this as an undue impediment to the freedom of speech.

If India's proposal is accepted, would that mean that the provision will have a direct effect on the Indian legal system?

- Arguably, India is a dualist state. Therefore, international law does not become a part of the domestic legal system unless it is specifically transformed into domestic law by Parliament, which will be required to enact legislation to implement the international law.
- This is different from the theory of monism, wherein international law is automatically incorporated into the domestic legal system of the country even without Parliament enacting an enabling legislation.
- However, over the years, the Supreme Court of India has moved away from this traditional dualist approach towards monism. In cases such as Vishakha v. State of Rajasthan (1997), National Legal Services Authority v. Union of India (2014), and K.S. Puttaswamy v. Union of India (2018), the court followed an approach of judicial incorporation by reading international law into domestic law in the absence of any specific prohibition in municipal law.

- In other words, the emerging principle is that courts will respect international law unless it can be shown that it is inconsistent with municipal law.
- If there will be an international treaty combating cybercrime with a provision similar to Section 66A, the Indian courts will not read this provision as part of domestic law because of the ratio in the Shreya Singhal case.
- It will be a classic case of an international law being in conflict with domestic law. Thus, the Indian courts will give primacy to the domestic law, not the international treaty provision criminalising "offensive speech".

Transforming international treaty:

- However, things may become convoluted if Parliament enacts legislation or amends existing legislation to implement the international treaty that criminalises "offensive messages".
- The government may get a law passed in Parliament using Article 253 of the Constitution, which states that Parliament has the "power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention", and place a provision similar to Section 66A back on the statute book.
- Legally, such a law can be justified as a necessary action to comply with India's international law obligations. It will then give the executive the power to book people for alleged "offensive messages" as was the practice earlier.

But what if the constitutionality of the re-introduced version of Section 66A is challenged?

- The courts will then examine the constitutionality of the reintroduced version of Section 66A in light of the fact that it was enacted to comply with India's international law obligations.
- But the constitutional court will still strike down the re-introduced version of Section 66A because the grounds on which this law was pronounced unconstitutional will still be valid in light of the fundamental right to free speech.
- In other words, just because Parliament enacts a law to give effect to an international treaty obligation, that does not mean that the law so enacted will not need to meet the test of constitutionality. Therefore, the possibility of Section 66A coming back on the statute book is bleak unless a bigger Supreme Court bench overrules Shreya Singhal.

Conclusion:

- This issue is not just about legal technicalities. The alarming point is that the Indian government proposed the inclusion of a provision in an international treaty which was struck down by its own apex court for breaching fundamental rights.
- This mindset does not augur well for constitutionally protected fundamental freedoms in India.

A NEW GLOBAL STANDARD FOR AI ETHICS

Context:

- Artificial intelligence (AI) is more present in all spheres of life, from predicting choice of using social media to helping one understand weather patterns to manage agriculture.
- AI algorithms can also be partially credited for the rapidity with which vaccines were developed to tackle COVID-19.
- The algorithms crunched complex data from clinical trials being undertaken in all corners of the world, creating global collaborations that could not have been imagined even a decade ago.
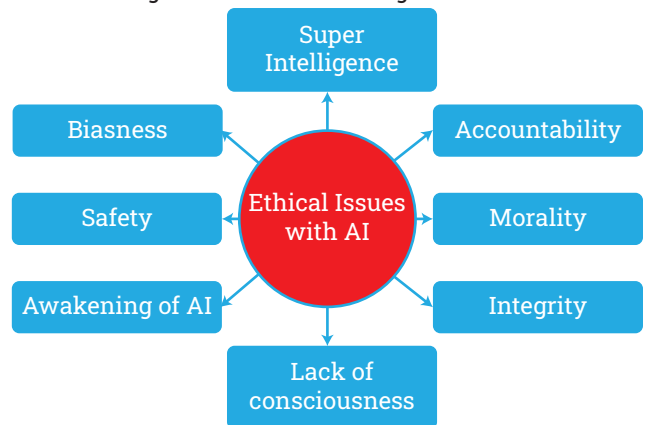
Issues in AI

- But AI-related technology cannot be said to always be beneficial. The data used to feed into AI often aren't representative of the diversity of our societies, producing outcomes that can be said to be biased or discriminatory.

Biases in facial recognition technologies:

- For instance, while India and China together constitute approximately a third of the world's population, Google Brain estimated that they form just 3% of images used in ImageNet, a widely used dataset. Similarly, there are problems emerging in facial recognition technologies, which are used to access phones, bank accounts and apartments, and are increasingly employed by law-enforcement authorities, in identifying women and darker-skinned people.
- For three such programs released by major technology companies, the error rate was 1% for light-skinned men, but 19% for dark-skinned men, and up to 35% for dark-skinned women.
- Biases in facial recognition technologies have led to wrongful arrests.

Why it matters more in case of India?

- These issues are of particular importance to India, which is one of the world's largest markets for AI-related technologies, valued at over $7.8 billion in 2021.

➲ Indeed, the National Strategy on Artificial Intelligence released by NITI Aayog in 2018 highlights the massive potential of AI in solving complex social challenges faced by Indian citizens across areas such as agriculture, health, and education, in addition to the significant economic returns that AI-related technologies are already creating.

Ethical AI governance:

➲ To ensure that the full potential of these technologies is reached, the right incentives for ethical AI governance need to be established in national and sub-national policy.

➲ India has made great strides in the development of responsible and ethical AI governance, starting with NITI Aayog's #AIForAll campaign to the many corporate strategies that have been adopted to ensure that AI is developed with common, humanistic values at its core.

UNESCO's Recommendation on the Ethics of Artificial Intelligence:

➲ However, until recently, there was no common global strategy to take forward this importance agenda. This changed in November 2021, when 193 countries reached a groundbreaking agreement at UNESCO on how AI should be designed and used by governments and tech companies.

➲ UNESCO's Recommendation on the Ethics of Artificial Intelligence took two years to put together and involved thousands of online consultations with people from a diverse range of social groups.

➲ It aims to fundamentally shift the balance of power between people, and the businesses and governments developing AI.

➲ Countries which are members of UNESCO have agreed to implement this recommendation by enacting actions to regulate the entire AI system life cycle, ranging from research, design and development to deployment and use.

➲ This means they must use affirmative action to make sure that women and minority groups are fairly represented on AI design teams.

Data protection:

➲ The recommendation also underscores the importance of the proper management of data, privacy and access to information. It establishes the need to keep control over data in the hands of users, allowing them to access and delete information as needed.

➲ It also calls on member states to ensure that appropriate safeguards schemes are devised for the processing of sensitive data and effective accountability, and redress mechanisms are provided in the event of harm. All of this takes enforcement to the next level.

Addressing broader socio-cultural impacts of AI:

➲ Additionally, the broader socio-cultural impacts of AI-related technologies are also addressed, with the Recommendation taking a strong stance that AI systems should not be used for social scoring or mass surveillance purposes; that particular attention must be paid to the psychological and cognitive impact that these systems can have on children and young people; and that member states should invest in and promote not only digital, media and information literacy skills, but also socio-emotional and AI ethics skills to strengthen critical thinking and competencies in the digital era.

➲ This is all critical for ensuring accountability and transparency of AI-related technologies, underpinning a strong rule of law that adapts to new digital frontiers.

Way Forward:

➲ The new agreement is broad and ambitious. It is a recognition that AI-related technologies cannot continue to operate without a common rulebook.

➲ Over the coming months and years, the recommendation will serve as a compass to guide governments and companies, to voluntarily develop and deploy AI technologies that conform with the commonly agreed principles it establishes – similar moves happened after UNESCO's declaration on the human genome set out norms for genetic research.

➲ Second, it is hoped that governments will themselves use the Recommendation as a framework to establish and update legislation, regulatory frameworks, and policy to embed humanistic principles in enforceable accountability mechanisms.

➲ To accompany countries in the realisation of the full potential of AI and with the aim of building the institutional capacity of countries and all the relevant stakeholders, UNESCO is in the process of developing tools to help them assess their readiness in the implementation of the Recommendation and identify, monitor and assess the benefits, concerns and risks of AI system.

THE ROLE OF CASTE IN ECONOMIC TRANSFORMATION

Context:

➲ India has been in a phase of jobless growth for at least two decades now, coupled with rising poverty and discontent in rural areas.

➲ The ongoing protests against the Agnipath programme, agitations against farm laws a year before, and agitation for reservation by agriculture castes are all arguably an outcome simmering discontent due to this jobless economic growth.

Link between economic transformation and caste in India:

➲ Caste, which is mostly confined to politics, could be among the answers, a structural factor that impedes economic transformation in India.

➲ Indeed, there is a link between economic transformation and caste in India, which is often missed by academics. In contemporary literature too, caste enters as a post-facto category in understanding inequalities in economic and social outcomes when the fact is that caste is central to economic transformation itself.

➲ Caste through its rigid social control and networks facilitates economic mobility for some and erects barriers for others by mounting disadvantages on them.

➲ Caste also shapes the ownership pattern of land and capital and simultaneously regulates access to political, social, and economic capital too.

There are three ways in which caste impedes the economic transformation in India

➲ Ownership and land inequality related to productivity failure within the farm sector

➲ Elite bias in higher education and historical neglect of mass education

➲ Caste-based entry barriers and exclusive networks in the modern sector

Why global south succeeded in structural transformation?

➲ If Arthur Lewis, a Nobel Prize winner for development economics, emphasised accumulation of physical capital for economic transformation in the developing world, Theodore William Schultz, an American economist who shared the prize with him the same year in 1979, underscored the need for human capital for better transition to modern sectors.

➲ For him, an educated workforce enhances productivity while entrepreneurship ability is increased through education, training, experience and so on.

➲ Hence, the divergent outcomes in structural transformation between countries in the global South, particularly India, China and South East Asia, is due to these three factors.

➲ All the nations which succeeded in achieving inclusive growth in the Global South had land reforms combined with human capital, invested in infrastructure by promoting capitalism from below and began industrialisation in the rural sector. Only India lost on all three counts.

Unequal distribution of land in India; a British legacy:

➲ India has one of the highest land inequalities in the world today. Unequal distribution of land was perpetuated by British colonial intervention that legalised a traditional disparity. Some castes were assigned land ownership at the expense of others by the British for its administrative practices.

➲ The British inscribed caste in land governance categories and procedures that still underpin post-colonial land ownership pattern in India. They made an artificial distinction between proper cultivators who belong to certain castes and those labourers — lower caste subjects who cultivated granted/gifted lands (Panchami, etc.) that have institutionalised caste within the land revenue bureaucracy.

➲ The prescribed categories and practices have entrenched caste inequality in land ownership. Even the subsequent land reform that took place after India's independence largely excluded Dalits and lower castes. It emboldened and empowered mainly intermediate castes at the expense of others in rural India.

➲ Even the Green Revolution that brought changes in the farm sector did not alter land inequality as it was mostly achieved through technological intervention.

➲ Though India has certainly seen surplus food production since then, the castes that were associated with this land pattern and benefited from the Green Revolution tightened their social control over others in rural India. Land still defines social status and pride in many parts of rural India.

Productivity:

➲ While land has lost its productive capacity since the 1990s, due to the real estate and construction turn in the Indian economy, it still works as a source of inheritance, family lineage and speculative capital. In that sense, the economic reforms of the 1990s were a watershed moment.

➲ Even those who made surplus in farm sectors could not transform their status from cultivators to capitalist entrepreneurs in the modern sectors, except a few castes in western and southern India.

➲ Those castes that had a stake in agriculture did not benefit from the economic reforms for two reasons — historical neglect of education and the entry barriers erected by the upper castes in modern sectors.

➲ The recent agitations by the Jats in Haryana and Punjab, the Marathas in Maharashtra and the Patels in Gujarat, demanding, among other things, reservation for their castes in higher education and formal jobs exemplify this new trend.

Neglect of education:

➲ If strong growth in productivity within the farm sector is crucial for sustained economic growth, an educated workforce is equally necessary to move to the modern sectors. India failed on both accounts.

➲ The Indian education system has been suffering from an elite bias since colonial times. British colonialists educated tiny groups of elites, largely from upper castes, for their own administrative purpose.

◐ Hence, inequality in access to education got translated into inequality in other economic domains including wage differentials in India. Indian elites in fact sustained their position at the top by denying education to a substantial proportion of the population till positive-discrimination policies were implemented in higher education.

◐ India's turn toward service growth is arguably an outcome of this historic elite bias in education.

Focus on basic education in China & East Asia:

◐ In contrast, Chinese and other East Asian countries invested in basic education and gradually shifted towards higher education. Their success in manufacturing is a direct outcome of the investment in human capital.

◐ One can find such trends even in the contemporary global labour market mirroring this skill spectrum; as South East Asia and China captured low-end manufacturing jobs, India largely concentrated in high-end technology jobs.

◐ China taking over India in manufacturing is due to this neglect in human capital formation.

Barrier to entrepreneurship:

◐ India did not witness such capitalism from below except in a few cases. Caste shaped policy outcomes, including India's highly unequal land reform and lack of public provision of education and health, which in turn erected barriers to economic diversification.

◐ Caste also worked in building social networks. Castes that were already in control of trading and industrial spaces resisted the entry of others. Even those who had economic surplus in farm sectors could not invest in non-farm modern sectors. Social inequalities have mounted barriers for economic transition. Agrarian capital could not move into modern sectors due to these roadblocks.

◐ Even the relative success in South India is being attributed to the 'Vaishya vacuum' — an absence of traditional merchant castes. In contrast such a transition took place in South East Asia, where diversification into urban enterprises by agrarian capitalists was possible.

Conclusion:

◐ Truncated transformation is partly an outcome of this interface between caste and economy. For caste is not a residual variable, but is an active agent which stifles economic transformation.

WITHOUT SOIL CONSERVATION, THERE IS NO FOOD SECURITY

Context:

◐ Food security is one of the core indicators of economic development. The modernisation of agriculture has brought huge dividends in terms of ensuring food security to large swathes of people, apart from improving crop production.

◐ A key element of sustainable food production is healthy soil because nearly 95 per cent of global food production depends on soil. The current status of soil health is worrisome.

Soil Degradation

◐ Soil degradation on an unprecedented scale is a significant challenge to sustainable food production.

◐ About one-third of the earth's soils is already degraded and alarmingly, about 90 per cent could be degraded by 2050 if no corrective action is taken.

◐ While soil degradation is believed to be occurring in 145 million hectares in India, it is estimated that 96.40 million hectares is affected by land degradation.

◐ Globally, the biophysical status of 5,670 million hectares of land is declining, of which 1,660 million hectares (29 per cent) is attributed to human-induced land degradation.

What needs to be done?

◐ The time has come for collective global action involving governments and civil society to reverse this alarming trend. Apart from natural causes, a variety of human activities lead to soil degradation.

◐ With the threat to food security looming large globally, compounded by the attendant hazard of serious damage to the environment, the need of the hour is to adopt innovative policies and agro-ecological practices that create healthy and sustainable food production systems.

◐ Extensive use of fertilisers and pesticides led to the deterioration of soil health and contamination of water bodies and the food chain, which pose serious health risks to people and livestock.

◐ There is urgent need for action to reduce dependence on pesticides worldwide and to promote policies advocating healthy and sustainable food systems and agricultural production.

◐ As soil is a fragile and finite resource, sustainable land management practices are essential to ensure healthy soil. They are critical not only to preventing degradation but also to ensuring food security.

◐ Every effort must also be made to prevent soil erosion as it not only affects fertility but also increases the risk of floods and landslides.

◐ Another challenge comes from salinisation, which affects 160 million hectares of cropland worldwide.

Soil health card scheme in India:

◐ Under the programme as of date, soil health cards have been distributed to about 23 crore farmers. The scheme has not only helped in improving the health of the soil, but has also benefited innumerable farmers by increasing crop production and their incomes.

◐ A study conducted by the National Productivity Council in 2017 on this programme revealed that there has been a decrease in the use of chemical

fertilisers in the range of 8-10 per cent as a result of the application of fertilisers and micro-nutrients as per the recommendations on the soil health cards. Overall, an increase in crop yields to the tune of 5-6 per cent was reported as a result.

➲ Several studies have established that natural farming and organic farming are not only cost-effective but also lead to improvement in soil health and the farmland ecosystem.

Save Soil Campaign:

➲ The Save Soil Movement was started by Sadhguru in March 2022, who embarked on a 100-day motorcycle journey passing through 27 countries. June 5 marks the 75th day of the 100-day journey.

➲ His attempt to engage with heads of governments, experts and government officials for concerted action on saving soil is laudable.

Way Forward:

➲ Soil pollution is an issue. It knows no borders and compromises the food we eat, the water we drink and the air we breathe. Soil degradation needs to be urgently addressed and reversed

LAW FOR ONLINE GAMING

Context:

➲ Online gaming has swiftly emerged as the most engaging form of entertainment in India owing to younger demographics, increased internet penetration and affordable smartphones.

Disrupting conventional forms of entertainment:

➲ Evolving technologies resulting in immersive experiences have led more people to adopt this new form of entertainment instead of the passive ones.

➲ The popularity of online gaming including e-sports, online casual games and real money gaming can be gauged readily with the industry growing at a rate of about 35 per cent in 2019-20, outpacing OTT, television, and social media platforms.

➲ Propelled by the mobile-first phenomenon and around 420 million gamers already active, online gaming is disrupting conventional forms of entertainment.

Question of Legality:

➲ Like any social change and most new technologies, the industry has been functioning under the weight of societal complexity and perceptual ambiguity, online real money gaming is often confused with gambling.

➲ Whilst games of skill (fantasy chess, bridge, rummy, and poker) are legal and protected under the Constitution, games of chance (roulette, teen patti, and dice) are essentially about gambling and hence deemed illegal.

Gambling under Indian Constitution:

➲ As per the Indian Constitution, gambling is classified under the State List. States have the power to regulate or prohibit such activity.

➲ Failing to distinguish between online skill-based gaming and gambling, some states have either placed restrictions or buried the sunrise sector under regulatory ambivalence.

➲ This is unfortunate given that "games of skill" are legitimate business activities protected under Article 19(1)(g) of the Indian Constitution as per the rulings of the Supreme Court and several High Courts till date. These rulings have also emphasised a clear distinction between "games of skill" and "games of chance."

Ban on online gaming in Tamil Nadu & afterwards:

➲ In 2021, the Tamil Nadu government amended the Tamil Nadu Gaming and Police Laws, 1930 banning online games. The ordinance banned all forms of online gaming and stated that "games of mere skill if played for wager, bet, money or other stakes" cannot be allowed in the state.

➲ The Madras High Court, however, struck down the law in August 2021 observing that a complete ban was unconstitutional.

➲ The Court also acknowledged that a game involving substantial skill would not amount to gambling. It also protected online gaming and the nuances surrounding it, thus, clearing the ambiguity between gaming and gambling as well as the legal status of online skill games in India.

Committee to examine:

➲ The government recently constituted a four-member committee to examine issues related to online gaming and make recommendations for the promulgation of an ordinance to regulate the sector.

➲ Constituted against the backdrop of reports on unfortunate instances of people indulging in irresponsible gaming, the committee will examine the ways to identify the online games which are addictive and suggest whether these games really involve skills or mere tricks. It will also study the algorithms of online games to ascertain whether they can be tweaked to the benefit of online gaming companies.

- This initiative is certainly a welcome one and demonstrates the government's progressive intent to protect the interests of the players. However, to really protect players, the regulatory muddle needs a comprehensive review.
- Globally, gaming is a well-regulated industry, and many countries, including the UK, US, and EU, have regulations in place to ensure that players enjoy this form of entertainment responsibly.
- Studying these global best practices would help in creating a gaming law that protects players, encourages responsible gaming, and assists legitimate operators while weeding out those who break the law.

Way Forward:

- The way forward is to formulate a structured gaming law that allows players to enjoy the thrills of online gaming responsibly, safely, transparently and securely.
- For the players, the industry and government, the need of the hour is to acknowledge the significance of responsible gaming and develop a regulatory framework defined by progressive policies to monitor and mitigate the possibility of irresponsible gaming.
- Attempts to solve the potential issues with bans will only result in players migrating from legitimate online skill-based operators to fly-by-night operators and lead to uncontrolled illegal activities, inadvertently compounding the problem the government is seeking to address.
- Regulation and responsible gaming will provide players with a secure and trustworthy environment. Combining responsible gaming elements with effective policies and recommendation services would aid in defining a strategy centred on ensuring player protection and increasing stakeholders' awareness and education.

ANTI-DEFECTION LAW & ISSUES

Why in news?

- The ongoing political crisis in Maharashtra has again brought into focus the issue of defection.
- Many ruling Shiv Sena legislators who seem to have revolted against the leadership of Chief Minister Uddhav Thackeray are now holed up in a hotel in distant Guwahati to keep out of the reach of party leaders.
- All indications are that there is a planned mass defection underway so that an alternative regime is formed in the State.

Isn't there a law against such defection?

- The Tenth Schedule of the Constitution, commonly known as the anti-defection law, was introduced in 1985 with a view to curb the tendency among legislators to switch loyalties from one party to another and facilitate the toppling of regimes and formation of new ones.
- It provides for the Presiding Officer of the legislature to disqualify any defector on a petition by another member.

The law contemplates two kinds of defection:

a) by a member voluntarily giving up membership of the party on whose symbol he got elected

b) by a member violating a direction (whip) issued by his party to vote in a particular way or to abstain from voting.

- While voting contrary to the party's whip is quite a straightforward instance of defection, the other mode of defection has proved to be a source of dispute and litigation.
- A member 'voluntarily giving up membership' does not refer to a simple resignation letter and formally joining another party.
- It is often an inference drawn by the party that loses a member to another based on the legislator's conduct. The Supreme Court has also ruled that 'voluntarily giving up membership' can be inferred from the conduct of a person.

How do the MLAs plan to avoid disqualification?

- The Shiv Sena has 55 members in the Maharashtra Assembly. Eknath Shinde, who leads the rebel group, claims that he has 40 MLAs with him, but the figure may include Independents.
- The group may claim to be the 'real Shiv Sena' and seek to 'expel' the current leadership.
- Under Paragraph 4 of the Tenth Schedule, disqualification on account of defection will not apply in case of a merger of one party with another. However, there is a rider. There is a deemed merger only if two-thirds of the party's total strength agrees to the merger.
- In Maharashtra, the rebel group will need to have 37 MLAs to make the claim that they constitute two-thirds of the legislature party. However, it remains to be seen if the Deputy Speaker (the Speaker's office is vacant), initially, and then the law courts will recognise such a 'merger'. Disqualification proceedings have already been initiated against some of them.

Split to avoid disqualification for defection:

- Originally, the 10th Schedule had spoken of a 'split' in a legislature party as an exception to the disqualification rule. That is if one-thirds of a legislature party leaves it or joins another party, it amounts to a 'split' and such members would not attract disqualification.
- This proved to be an escape clause for legislators to form a group that amounted to one-third of the legislature party's total strength and then cross over.
- Paragraph 3, which allowed the use of a split to avoid disqualification for defection, was deleted by the Constitution (91st Amendment) Act, 2003.

How foolproof is this plan?

- It remains to be seen if the defectors will get away by using the 'merger' argument.

Case of Goa:

- In a recent instance, the Bombay High Court at Goa ruled in favour of MLAs who had defected from the Congress to the BJP in Goa.
- The court noted that they satisfied the two-thirds requirement for a deemed merger and ruled that they were exempted from disqualification. The Congress has appealed to the Supreme Court.
- The main ground of appeal is that the Court should not have accepted the existence of a merger, as the merger envisaged in Para 4 of the 10th Schedule is a two-step process under which one political party first merges with another, and then the legislators accept the merger.
- In the absence of a merger of the parties, the mere fact that two-thirds of the MLAs cross over to the other party does not save them from disqualification.

Case of Meghalaya:

- In a similar case in Meghalaya, the Speaker recognised as a 'merger' the crossover of 12 Congress MLAs out of a total of 17 to the Trinamool Congress and refused to disqualify them.
- The Supreme Court may have to adjudicate whether an actual merger is a condition precedent for bringing into play the 'deemed fiction' of a merger after two-thirds of a party's legislators cross over.

Relevance of the 10th Schedule:

- This brings to the question whether the anti-defection law has been rendered meaningless by various events. What was introduced as a panacea for the menace of floor-crossing and toppling of elected regimes by engineering defections has proved largely ineffective in many cases.
- Recent instances give an idea of the various ploys adopted by parties, legislators and Speakers to either evade the law against defection or to achieve partisan political ends.
- The most common these days is for a ruling party with a big majority to poach the main Opposition

parties without any regard for the anti-defection law. When the aggrieved party moves for disqualification, Speakers choose not to act, thus formalising the defection.

Invocation by Supreme Court in Manipur:

- In Manipur, for instance, seven Congress MLAs joined the BJP shortly after the 2017 Assembly election and one of them became a Minister too. However, the Speaker did not act on petitions to disqualify the Minister for over two years.
- In January 2020, the Supreme Court directed the Speaker to dispose of the matter within four weeks. As the Speaker passed no order even long after the deadline, the Court invoked its extraordinary powers to remove T. Shyamkumar Singh, the Minister concerned, from the Cabinet and barred him from entering the Assembly.
- Opposition members have crossed over to the ruling party in Andhra Pradesh and Telangana in large numbers in recent years, but did not suffer disqualification.

Supreme Court intervention in case of Karnataka in 2010:

- In Karnataka, in 2010, a group of BJP rebels against then Chief Minister B. S. Yeddyurappa met the Governor to express their resentment against his continuance in office and sought a 'constitutional process' to be initiated.
- The Speaker subsequently disqualified them on the ground that their action in meeting the Governor amounted to voluntarily giving up their membership.
- However, the Supreme Court ultimately set aside their disqualification on procedural grounds, they were not given sufficient time to file their replies and were not given advance copies of material relied upon by the Speaker.

Case of Tamil Nadu 2017:

- In an attempt to capitalise on this precedent, a group of AIADMK MLAs revolted against Chief Minister Edappadi K. Palaniswami in 2017 and met the Governor seeking a similar 'constitutional process' against him.
- The Speaker disqualified 18 MLAs for 'voluntarily giving up membership' of the party which had fielded them as candidates.
- However, the Madras High Court by a 2:1 majority, upheld the disqualification. Though facts were similar to the developments in Karnataka, the High Court was of the view that there was nothing unreasonable or perverse in the Speaker coming to the conclusion from the MLAs' conduct that they were seeking to topple the regime.

Defection through resignation:

- In 2019, one saw the spectacle of some members submitting resignation letters to escape

disqualification proceedings, while the Speaker questioned the voluntariness and motive behind the resignations.

- 'Defection through resignation' became a thing suddenly. The Supreme Court ultimately ruled that the Speaker has the authority to verify if a resignation is voluntary and genuine, but it is constitutionally impermissible for the Speaker to take into account extraneous factors while considering the resignation.
- In other words, once it is clear that a member is resigning out of free will, the Speaker is bound to accept it.

Way Forward:

- As defections continue unabated and Speakers refrain from acting on these developments based on their political loyalties, there is a strong case to reform the anti-defection law.
- Redefining the merger clause, shifting the adjudicatory power from the Speaker to some other credible authority and even dispensing wholly with the law are measures that jurists have suggested.
- Some believe that the anti-defection law should be scrapped as it enslaves members to their party line, prevents them from representing their constituents and the people, and violates their freedom of expression.

BRINGING MSMES INTO INCLUSIVE AND SUSTAINABLE GLOBAL VALUE CHAINS

Context

- Since 2017, Micro, Small, and Medium Enterprises (MSME) day is observed on June 27, every year, to recognise the contribution of these industries in the implementation of the Sustainable Development Goals (SDGs) and in promoting innovation, creativity and sustainable work for everyone.
- MSME day was marked by the United Nations General Assembly in its 74th Plenary on April 6, 2017.

Theme:

- The theme of MSME day 2022 is 'Resilience and Rebuilding: MSMEs for Sustainable Development'.

Contribution of MSME in India:

- Though the growth and achievements of large businesses in India have received much attention, micro, small and medium enterprises (MSME) actually account for over 99% of businesses.
- MSMEs are the largest employer in India outside of agriculture, employing over 11.1 crore people, or 45% of all workers.
- It is no exaggeration to call MSMEs, privately owned enterprise with less than ₹50 crore in investments in plant and machinery and turnover below ₹250 crore, the backbone of the Indian economy.

Challenges during pandemic & Climate Change:

- The disruption of the pandemic severely impacted MSMEs, especially those in the services sector.
- Their small size and lack of access to resources meant that many were only beginning to mount a fragile recovery just when renewed war, supply shocks and soaring fuel, food and fertilizer prices presented a host of new threats.
- And all of this comes against the backdrop of the ongoing climate crisis, the greatest disruption multiplier of all.
- At the same time, the potential of India's small businesses is truly immense. India faces a unique moment in history, a potential demographic dividend of tremendous proportions. To leverage this opportunity, India needs to create many jobs, especially for the one million young people entering the labour market every month.

Incapable of Meeting standards:

- While some MSMEs operate at the highest industry standards, most do not meet today's standards on productivity, environmental sustainability, and health and safety of workers.
- This is further exacerbated by the high degree of informality in the sector, with many enterprises unregistered, and both employers and workers are lacking awareness of and commitment to comply with labour and environmental laws.
- As a result, informal enterprises cannot access formal MSME support and financing nor participate in global value chains that require full compliance with all applicable regulations.

"Make in India":

- The Government of India has rightly identified the development of the country's MSME ecosystem as a top priority for achieving Atma Nirbhar Bharat (self-reliant India).
- India's ambitious "Make in India" campaign aims to catapult the country up the manufacturing value chain to position itself as a global manufacturing hub.
- Initiatives such as the production linked incentives (PLI) schemes and the recently launched zero effect zero defect (ZED) certification are helping to promote and boost the sector.

UN Support to MSME in India:

- To help accelerate this process, the UN system in India is supporting these and other MSME development initiatives at the local, State and national levels.
- Agencies such as the United Nations Industrial Development Organization (UNIDO), International Labour Organization (ILO), United Nations Development Programme (UNDP), UN Women, IFAD and others are working with MSMEs as they navigate a rapidly changing post-pandemic economic landscape shaped by large-scale transitions, chiefly digitalisation, greening and the reorganisation of value chains.

Digitalization:

- Firstly, digitalisation concerns the integration of digital technologies, such as big data, artificial intelligence and virtual reality, in business processes, also known as Industry 4.0. With few exceptions, digitalisation into smart manufacturing operations is still in its infancy.
- Therefore, there is a need for replicable digital solutions adapted for MSMEs, including digital enhancements for machinery and equipment currently in use.
- Government initiatives such as the Digital Saksham and the interlinking of the Udyam, e-Shram, National Career Service (NCS), and Atmanirbhar Skilled Employee-Employer Mapping (ASEEM) portals show the promise of targeted digitalisation schemes.

Environmental impact:

- Secondly, "greening" reduces the environmental impact of MSME operations and fosters cleantech innovation and entrepreneurship to accelerate the transition to a circular and low carbon economy.
- Energy efficiency provides a case in point as business and climate benefits go hand in hand.
- And under the Partnership for Action on Green Economy, UNIDO and ILO work to support government initiatives on inclusive and green transformation strategies for key manufacturing sectors, together with UNDP, the United Nations Environment Programme (UNEP) and the United Nations Institute for Training and Applied Research (UNITAR).
- ILO works in Pune and Ahmedabad to formalise municipal solid waste management for clean food, textile and garment value chains in Odisha and Andhra Pradesh.

Reorganisation of value chains:

- Thirdly, to increase the resilience of supply in response to recent shocks, production locations for global value chains are increasingly shifting and diversifying across countries and regions.
- This presents a strategic opportunity for India, which the PLI aims to tap into. Supply chain relocation is often accompanied by greater involvement of suppliers in innovation and product development.

- To further leverage this opportunity, UNIDO is spearheading the notion of manufacturing excellence. This means fostering a culture of continuous improvement and innovation that reduces waste and increases productivity, safety and quality.

Job creation:

- The Prime Minister's Employment Generation Programme (PMEGP) is also creating opportunities for self-employment and micro enterprises, with over 7 lakh micro enteprises assisted in becoming economically viable.
- Similarly, ILO, together with the Federation of Indian Chambers of Commerce & Industry (FICCI) and corporates, is supporting MSMEs in creating and retaining jobs, with over 150 MSMEs having improved productivity, aligned to international standards and integrated into global supply chains, and the Start and Improve Your Business programme helping over a lakh young people across five States launch enterprises.

Way Forward:

- The compelling vision of India as a world-class manufacturing and services hub for the world, moving towards upper middle-income status and achieving the Sustainable Development Goals, can best be achieved with the widespread and transformational uplifting of the MSME segment.
- Government initiatives, supported by UN agencies and partners, have helped demonstrate this is doable if further scaled up, with lessons for enhancement being drawn together, including the Ministry of MSME.
- A forward-looking mindset centres on policy makers and society at large fully recognising and supporting the central socio-economic role that MSMEs play in India, as across the world.
- In turn, to fully unlock emerging opportunities in the rapidly changing global value chain ecosystem and maximise the demographic dividend, MSME owners need to further commit to formalising their businesses, investing in improved productivity, compliance and most of all, decent work and jobs for India's aspiring youth.

STATES, FREEBIES AND THE COSTS OF FISCAL PROFLIGACY

Context:

- With the illustration of Punjab through not unique, in fact, many States are pursuing the freebie culture, some even more aggressively than Punjab, lets's look at freebie culture in India.
- Concerned by an increasing number of States that are embarking on this financially ruinous path, senior bureaucrats reportedly flagged the issue at a meeting with the Prime Minister, telling him that 'some States might go down the Sri Lankan way'.

Case of Punjab:

➲ During the campaign ahead of the Punjab Assembly election, the Aam Aadmi Party (AAP) promised a sum of ₹1,000 per month to every woman in the State.

➲ Arvind Kejriwal, emphasised that under AAP's 'Mission Punjab' for the Punjab polls 2022, if there were three adult women in a household (daughter-in-law, daughter, mother-in-law), each of them would get ₹1,000.

➲ When questioned how Punjab, already reeling under heavy debt, could afford this, he said something to the effect that if there is good political management, money would not be a problem.

Checks on Electoral promises:

Electoral promises of this kind raise several questions:

➲ Is borrowing and spending on freebies sustainable?

➲ Is this the best possible use of public money?

➲ What is their opportunity cost — what is it that the public are collectively giving up so that the government can fund these payments?

➲ Should not there be some checks on how much can be spent on them?

Concerns:

➲ Ideally, governments should use borrowed money to invest in physical and social infrastructure that will generate higher growth, and thereby higher revenues in the future so that the debt pays for itself.

➲ On the other hand, if governments spend the loan money on populist giveaways that generate no additional revenue, the growing debt burden will eventually implode and end in tears.

Issue raised by senior bureaucrats with the PM:

➲ There is an argument that this concern is being exaggerated.

➲ If looked at any analysis of State Budgets by the Reserve Bank of India or any think tank, the State finances are in good, if indeed robust, health, and that all of them are scrupulously conforming to the Fiscal Responsibility and Budget Management (FRBM) targets.

➲ This is a misleading picture. Much of the borrowing that funds these freebies happens off budget, beyond the pale of FRBM tracking.

Burden on State exchequer:

➲ The typical modus operandi for States has been to borrow on the books of their public enterprises, in some cases by pledging future revenues of the State as guarantee. Effectively, the burden of debt is on the State exchequer.

➲ The Comptroller and Auditor General of India (CAG) had in fact pointed out that in respect of some States 'if extra-budgetary borrowings are taken into account, the liabilities of the government are way above what is acknowledged in the official books'.

Placing short-term gains ahead of long-term sustainability:

➲ The obvious motivation for States in expanding freebies is to use the exchequer to build vote banks. A certain amount of spending on transfer payments to provide safety nets to the most vulnerable segments of the population is not only desirable but even necessary.

➲ The problem arises when such transfer payments become the main plank of discretionary expenditure, the spending is financed by debt, and the debt is concealed to circumvent the FRBM targets.

➲ The more States spend on transfer payments, the less they have for spending on physical infrastructure such as, for example, power and roads, and on social infrastructure such as education and health, which can potentially improve growth and generate jobs.

Institutional checks, balances:

Legislature:

➲ In theory, the first line of defence has to be the legislature, in particular the Opposition, whose responsibility it is to keep the Government in line.

➲ But the Opposition does not dare speak up for fear of forfeiting vote banks that are at the end of these freebies.

CAG audit:

➲ Another constitutional check is the CAG audit which should enforce transparency and accountability.

➲ In practice, it has lost its teeth since audit reports necessarily come with a lag, by when political interest has typically shifted to other hot button issues.

Market:

➲ It can signal the health or otherwise of State finances by pricing the loans floated by different State governments differently, reflecting their debt sustainability.

➲ But in practice this too fails since the market perceives all State borrowing as implicitly guaranteed by the Centre, never mind that there is no such guarantee in reality.

Suggestions:

Amendment to FRBM:

➲ First, the FRBM Acts of the Centre as well as States need to be amended to enforce a more complete disclosure of the liabilities on their exchequers.

➲ Even under the current FRBM provisions, governments are mandated to disclose their contingent liabilities, but that disclosure is restricted to liabilities for which they have extended an explicit guarantee. The provision should be expanded to cover all liabilities whose servicing obligation falls on the Budget, or could potentially fall on the Budget, regardless of any guarantee.

Enhancing Centre's role:

➲ Second, under the Constitution, States are required to take the Centre's permission when they borrow. The Centre should not hesitate to impose conditionalities on wayward States when it accords such a permission.

➲ States slapped with conditionalities will of course baulk and allege political motives.

➲ The challenge for the Centre will be to act transparently and in accordance with well-defined, objective and contestable criteria.

Financial Emergency:

➲ Finally, there is the draconian provision in the Constitution of India which allows the President to declare financial emergency in any State if s/he is satisfied that financial stability is threatened.

➲ This has never been invoked so far for fear that this will turn into a political weapon of mass destruction. But the provision is there in the Constitution for a reason.

➲ After all, the root cause of fiscal irresponsibility is the lure of electoral nirvana. It will stop only if the political leadership fears punishment.

➲ It is therefore important to ensure that the prospect of a financial emergency in case of gross and continuing fiscal irresponsibility is not just an abstract threat but a realistic one.

Way Forward:

➲ The Centre has embarked on course correction over the last few years. It should complete that task in order to command the moral authority to enforce good fiscal behaviour on the part of States.

RIGHT TO VOTE OF CONVICTS IN INDIA

Context:

➲ In States with bicameral legislatures, seats in the Legislative Council are filled following an indirect election in which members of the Legislative Assembly cast votes.

➲ Recently, the members of the Maharashtra Legislative Assembly were scheduled to convene at the Vidhan Sabha to elect the members of the Vidhan Parishad.

➲ Nawab Malik and Anil Deshmukh, who are in prison in connection with money laundering offences, approached the courts with a prayer: despite their incarceration, they should be temporarily released to cast votes in the election, so that they may discharge their duty as sitting MLAs.

➲ Their prayer was rejected, first by a special Judge under the Prevention of Money Laundering Act, then by the Bombay High Court, and finally by the Supreme Court.

The yardstick for disenfranchisement:

➲ Interestingly, before dismissing the applications, the apex court observed that it is open to reconsidering the legal provision, Section 62(5) of the Representation of the People Act, 1951, which prevented the two MLAs from casting their votes.

➲ In the past, the Supreme Court has observed that the intent of this provision is to maintain the integrity of elections by excluding 'persons with criminal background' from participating in them.

➲ Ideally, this objective can be achieved through a provision which disenfranchises persons who have been convicted of certain kinds of grave offences.

High Court dismisses petition seeking voting rights for prisoners:

➲ However, Section 62(5) does not use conviction as the yardstick for disenfranchisement; it uses confinement.

➲ As a result, undertrial prisoners (who constitute over 75% of India's nearly 5 lakh prisoners) cannot vote. Neither can persons detained in civil prison for failing to repay a debt.

➲ But remarkably, a person who has been convicted for a criminal offence and has managed to secure bail can vote. If the objective is to keep criminals away from elections, this is an anomaly.

➲ Indeed, it appears that as a result of a poor choice of words, an otherwise well-intentioned law has snatched away the right to vote from an undertrial who is presumed to be innocent and from a civil offender, but has granted it to a criminal convict (out on bail) whose guilt has been determined.

Collision with Article 14:

➲ This puts Section 62(5) in direct collision with Article 14 of the Constitution (equality before the law to all persons).

➲ Whenever a law treats two groups of persons unequally, it must satisfy a set of basic tests under Article 14 to be valid: the distinction created by the law must be based on coherent differences between

the two groups of persons, and these differences must have a rational link with the objective that the law seeks to achieve.

⮑ Section 62(5) treats a group of people differently by stripping them of the right to vote. What sets this group apart from those allowed to vote is their confinement in prison.

⮑ This has no rational link with the purported object of the law, i.e., keeping criminals away from the electoral process.

⮑ As alternatives, the provision could have disenfranchised persons convicted of certain heinous offences or those sentenced for a minimum duration.

Rule in other countries:

⮑ In the U.K., for instance, only convicts sentenced to prison for four years or more cannot vote.

⮑ In Germany, only persons convicted of certain political offences are disenfranchised.

⮑ Where the law formerly restricted all prisoners from voting (Canada, for instance), constitutional courts intervened and struck it down for being arbitrary and disproportionate.

SC to reconsider constitutionality of the provision:

⮑ Section 62(5) has survived many challenges before the courts. Each time, the courts have lauded the objective of weeding out criminal elements from the electoral process, but have stopped short of examining whether the provision, in the manner in which it is worded, can claim to achieve this aim.

⮑ In a welcome move, while dismissing Mr. Malik and Mr. Deshmukh's bail applications, the Supreme Court observed that it is open to reconsidering the constitutionality of the provision.

⮑ The reason for this shift is that the voters who were deprived in this instance were not seeking to act as ordinary citizens but as constitutional functionaries.

⮑ Through the MLAs' votes, the residents of their constituencies indirectly exercise their franchise in the election to the Vidhan Parishad. By preventing the two MLAs from casting their votes, the court has inadvertently stripped all their constituents of their franchise.

Way Forward:

⮑ Finding fault with Section 62(5) for only this reason would be missing the forest for the trees. As a result of its sweeping nature, the provision suffers from a deeper malaise.

⮑ The question cannot be whether the voter is an ordinary citizen or an MLA, but whether the voter, given their conduct, deserves to participate in the electoral process or not.

⮑ A constitutional inquiry into Section 62(5) with the former question as its only basis is set for failure.

⮑ The apex court must re-examine the issue in the totality of its circumstances and Parliament must

replace the provision with a tightly worded version disenfranchising only certain classes of prisoners.

THE INDIAN CHALLENGE IN AFGHANISTAN

Why in news?

⮑ Recently, just 24 hours after a massive earthquake hit Afghanistan, the Indian Air Force moved in with tonnes of relief. It was badly needed, given that the worst earthquake in 20 years hit a region that has been at war for decades.

⮑ The massive earthquake was centred around Khost along the Afghanistan- Pakistan border, and measured 5.9 on the Richter Scale.

Reopening of Indian embassy:

⮑ The recent reopening of the Indian embassy in Afghanistan marks the formal return of India nearly ten months after it was evacuated the chancery soon after the Taliban walked into the Afghan capital without firing a shot.

⮑ Surprisingly, the Indian diplomats found all the embassy property in Kabul—the ambassador's residence, the new Indian chancery next door as well as the residential accommodation inside the complex—in good shape.

⮑ The Taliban had made sure that all the properties had been properly guarded these last ten months, sending a powerful signal that it wants to re-engage with India.

⮑ In contrast, Taliban fighters had pillaged other embassy properties, including the United States and Norway.

Attack on Gurudwara:

⮑ Moreover, the fact that Taliban security guards fought off an attack by the Islamic State Khorasan Province (ISKP) on the Kabul gurudwara a few days before—the ISKP is widely believed to be a proxy for Pakistani intelligence.

⮑ This move is not just another sign that the Taliban wants India back in Kabul, but shows that it is determined to re-establish normality in Afghanistan after 20 years of war.

India's calculated response:

⮑ In return, India sent all the right signals to the Taliban since it shut down its embassy in Kabul a few days

after the Taliban walked in on 15 August 2021. It refused to allow any Afghans to enter India, including those with valid Indian visas, although now there seems to be some let up on that hardline.

➲ In fact, as it sat on the United Nations Security Council, India chose to abstain from a UNSC resolution pleading that the Taliban reopen girls' schools.

➲ The Taliban sees no problem with Afghan soldiers being trained in India.

➲ But nothing else signifies the change as much, perhaps, as an Indian Air Force plane landing on the runway in Kabul carrying the Indian diplomats to their new diplomatic posting.

Strong need for Indian Mission:

➲ Certainly, the Indian decision to reopen its mission in Taliban-ruled Afghanistan will upset several people, especially those who believe that India, which has suffered long and hard at the hands of terrorists, would never break bread with another terror group like the Taliban.

➲ But this is a new world order and the world is beginning to recognise the need to engage with the new rulers of Afghanistan.

➲ That is why, 14 nations have opened their missions in Kabul and not just those which had engaged with the Taliban even when the Ashraf Ghani government was in power.

➲ These include Pakistan, Russia, China, Iran, Turkey and Central Asian republics, but also the European Union and, separately, Germany, which had been at the forefront of criticising the Taliban and its diktats.

➲ For India to have a presence inside Afghanistan, therefore, is essential. A mission gives it eyes and ears, it allows diplomats to meet all kinds of Afghans as well as fellow foreign diplomats stationed there.

➲ In its attempt to establish itself as a normal state, the Taliban, too, has sent its diplomats to four countries— Pakistan, Russia, China and Turkmenistan.

The security issue:
Terrorist Groups:

➲ Then there exists the ever-present issue of security, which was apparent from the recent attack on a gurdwara in Kabul, apparently by the Islamic State Khorasan (IS-K).

➲ The IS-K is a group of many parts, with a presence in the north, along the Pakistan border, and in Kabul. In the north, the Russians accuse the Americans of assisting the group, while in Kabul, the IS-K's worst attack was against withdrawing U.S. troops in August 2021.

➲ In recent times, IS-K has become strongly anti-India, along with al- Qaeda, which put out a video where chief Ayman Al Zawahiri was seen praising a Karnataka girl for defending the hijab.

➲ Even more vicious language was used in the threat made against Nupur Sharma, for her controversial remarks against the Prophet. A recent UN report notes that both groups are operational, and may see increased recruitment of young men with no alternatives.

Way Forward:

➲ India has around 400 projects in all the 34 provinces of Afghanistan. With the Taliban offering protection to foreign embassies, and acting quickly in the recent gurdwara bombing, it is possible that the Indian effort will continue unimpeded.

➲ Also the Taliban leaders assured him that they would not allow Afghan soil to be used by Pakistan-based terror groups to attack India and would be happy to act on specific intelligence.

➲ It is also important to remember that the Taliban have never actively been anti-India. Difficulties in implementation are more likely to arise from intra-Afghan tensions rather than any hostility to India.

POLITY & GOVERNANCE

QUESTIONING THE SAFETY OF AADHAAR

Why in news?

- After issuing an advisory asking people to refrain from sharing photocopies of their Aadhaar Card, the Unique Identification Development Authority of India (UIDAI) opted to withdraw the notification.
- It stated that the action was to avert any possibility of 'misinterpretation' of the (withdrawn) press release, asking people to exercise "normal prudence" in using/sharing their Aadhaar numbers.

What did the UIDAI advisory say?

- The withdrawn notice had suggested holders use a masked Aadhaar card instead of the conventional photocopy, adding that the document must not be downloaded from a cybercafé or public computer and if done for some reason, must be permanently deleted from the system.
- 'Masked Aadhaar' veils the first eight digits of the twelve-digit ID with 'XXXX' characters.
- The notice informed that only entities possessing a 'User Licence' are permitted to seek Aadhaar for authentication purposes. Private entities like hotels or film halls cannot collect or keep copies of the identification document.

What does the law say?

- The Aadhaar (Targeted Delivery of Financial and Other Subsidies Benefits and Services) Act, 2016 makes it clear that Aadhaar authentication is necessary for availing subsidies, benefits and services that are financed from the Consolidated Fund of India.
- In the absence of Aadhaar, the individual is to be offered an alternate and viable means of identification to ensure she/he is not deprived of the same.
- Separately, Aadhaar has been described as a preferred KYC (Know Your Customer) document but not mandatory for opening bank accounts, acquiring a new SIM or school admissions.
- The regulator does not receive or collect the holder's bank, investment or insurance details. Additionally, the Aadhaar Act forbids sharing Core Biometric Information (such as finger print, iris scan, among other biometric attributes) for any purpose other than Aadhaar number generation and authentication.
- The Act makes it clear that confidentiality needs to be maintained and the authenticated information cannot be used for anything other than the specified purpose. More importantly, no Aadhaar number (or enclosed personal information) collected from the holder can be published, displayed or posted publicly.
- Identity information or authentication records would only be liable to be produced pursuant to an order of the High Court or Supreme Court, or by someone of the Secretary rank or above in the interest of national security.

Is identity theft via Aadhaar possible?

- As per the National Payment Corporation of India's (NCPI) data, ₹6.48 crore worth of financial frauds through 8,739 transactions involving 2,391 unique users took place in FY 2021-22.
- Since the inception of the UID project, institutions and organisations have endowed greater focus on linking their databases with Aadhaar numbers, including for bank accounts especially in light of the compulsory linkage for direct benefit transfer schemes.
- The NPCI's Aadhaar Payments Bridge (APB) and the Aadhaar Enabled Payment System (AEPS) facilitate direct benefit transfer (DBT) and allow individuals to use Aadhaar for payments. This requires bank accounts to be linked to Aadhaar.
- In 2017, researchers at the Centre for Internet and Society (CIS) acquired information of various beneficiaries of such social security and employment schemes such as their Aadhaar numbers, bank account details, job card status, mobile number etc.
- The same year, the UIDAI in response to an RTI stated that more than 200 central and State government websites publicly displayed details of some Aadhaar beneficiaries such as their names and addresses.
- Both were made possible by the lack of robust encryption. This data could be potentially used to fraudulently link the rightful beneficiary's Aadhaar with a distinct bank account, embezzling the beneficiary by impersonation, made possible by the sizeable identity documents available.

What are some of the structural problems that the UIDAI faces?

Aadhaar Data Vault:

- The Aadhaar Data Vault is where all numbers collected by authentication agencies are centrally stored.
- Its objective is to provide a dedicated facility for the agencies to access details only on a need-to-know basis.

➲ Comptroller and Auditor General of India's (CAG) latest report stipulated that UIDAI neither specified any encryption algorithm (as of October 2020) to secure the same nor a mechanism to illustrate that the entities were adhering to appropriate procedures. It relied solely on audit reports provided to them by the entities themselves.

Issue with biometric authentication:

➲ Further, UIDAI's unstable record with biometric authentication has not helped it with de-duplication efforts, the process that ensures that each Aadhaar Number generated is unique.

➲ The CAG's reported stated that apart from the issue of multiple Aadhaars to the same resident, there have been instances of the same biometric data being accorded to multiple residents.

➲ As per UIDAI's Tech Centre, nearly 4.75 lakh duplicate Aadhaar numbers were cancelled as of November 2019. The regulator relies on Automated Biometric Identification Systems for taking corrective actions.

➲ The CAG concluded it was "not effective enough" in detecting the leakages and plugging them. Biometric authentications can be a cause of worry, especially for disabled and senior citizens with both the iris and fingerprints dilapidating.

➲ Though the UIDAI has assured that no one would be deprived of any benefits due to biometric authentication failures, the absence of an efficient technology could serve as poignant premise for frauds to make use of their 'databases'.

Huge data:

➲ Also, what essentially needs to be remembered is that UIDAI is dealing with the world's second most populous country. As of March 2021, it had generated 129.04 crore Aadhaar numbers which covers 94% of the projected population.

Conclusion

➲ The CAG concluded it was "not effective enough" in detecting the leakages and plugging them.

➲ Though the UIDAI has assured that no one would be deprived of any benefits due to biometric authentication failures.

➲ The absence of an efficient technology could serve as poignant premise for frauds to make use of their 'databases'.

THE BIHAR GOVERNMENT'S CASTE-COUNT

Why in news?

➲ Recently, Bihar Cabinet approved a proposal to carry out a caste-based 'count' in the State.

➲ The State would spend its own resources for the exercise.

➲ The Union Government had, earlier, snubbed the Bihar government's request for a caste census on the grounds that it would be a "divisive exercise".

Why do all political parties support it in Bihar?

➲ Almost all political parties in Bihar identify themselves with a particular caste, sub-caste or community for representation, and leaders cannot afford to take their political identity out of that caste or group.

➲ The objective behind this demand is to bring out the recent changes in caste groups and how resources may be best shared.

➲ The data will help the State government understand the exact population of various caste groups and assess the socio-economic development in every group, and the welfare schemes needed for their benefit.

Why Union Government is against a caste census? What about the State unit?

➲ The Union Government has categorically ruled out conducting a Socio-Economic Caste Census (SECC), stating that a caste census (except that for Scheduled Castes and Scheduled Tribes done traditionally) is unfeasible, "administratively difficult and cumbersome."

➲ In the case of Bihar, the BJP's central leaders feel that the demand for a caste census in the State is an attempt to revive Mandal politics by identifying castes and sub-castes and their present status for electoral benefits.

➲ For the party, the upper castes, which according to a rough estimate comprise 14% of the population, largely constitute its vote bank, and it fears that if there is a caste census the number of other castes, sub-castes and communities will be known and other parties who claim to represent different subsets of castes might unite against them politically and electorally..

➲ The Bihar legislature, earlier, in 2019 and 2020, had passed a resolution for a caste-based census in the State.

➲ After recent Cabinet meeting, the Bihar state government said there would be a 'ganana' or count, and refrained from calling it a census.

Benefit of Caste Count

➲ Proper implementation of Social equality programmes and welfare measures

➲ A count of every category of citizens is necessary so that they can get the benefit of all welfare measures.

➲ In the absence of such data, there is no proper estimate for the population of OBC and EBC

Have such exercises happened in other States?

➲ The Tamil Nadu government has appointed a commission to formulate a methodology to collect caste-wise particulars of its population and use that to come up with a report.

➲ States like Karnataka, Odisha and Telangana have carried out caste counts, calling it a "socio-economic survey".

SOCIAL MEDIA: APPEAL PANELS MAY BE SET UP FOR GRIEVANCES

Why in news?

➥ The Ministry of Electronics and Information Technology (MeitY) has proposed the setting up of government-appointed appellate committees that will be empowered to review and possibly reverse content moderation decisions taken by social media companies like Facebook, Twitter and YouTube.

Background:

➥ In a draft of proposed amendments to the Information Technology Rules 2021 (IT Rules), the MeitY said that the Central Government shall constitute one or more Grievance Appellate Committees, which shall consist of a Chairperson and such other Members, as the Central Government may, by notification in the Official Gazette, appoint".

Grievance officer under IT Rules 2021:

➥ Under the IT Rules, released in February 2021, social media companies like Facebook and Twitter are mandated to appoint India-based resident grievance officers as part of their due diligence as 'intermediaries' who enjoy legal immunity from third-party content on their platform.

➥ These officers are responsible for overseeing the grievance redressal mechanism of complaints from the people who use their services.

➥ This means that if a user has an issue with an account or a piece of content on a social media platform, they can complain about it to the company's grievance officer who will have to act and dispose of that complaint within 15 days.

➥ It suggests that in case a user is not satisfied with the content moderation decision taken by a company's grievance officer, they can appeal that decision before the proposed government-appointed appeals committee.

➥ Every order passed by the Grievance Appellate Committee shall be complied with by the concerned intermediary.

Composition of GAC:

➥ The Grievance Appellate Committee is set up to provide an alternative to a user to file an appeal against the decision of the Grievance Officer rather than directly going to the court of law. However, the user has the right to seek judicial remedy at any time.

➥ The Ministry has not specified the composition of the committee and if it will consist of only people from the government or also include former judges and people from the industry. The committee will have 30 days to act on a user's appeal.

What is the current remedial measure available?

➥ Currently, the only remedial measure a user has if they feel a content decision by a company is unfair is to approach the courts.

Criticism of the move:

➥ The proposal has invited criticism from civil society.

➥ The Delhi-based digital rights group Internet Freedom Foundation said that the proposal, without any legislative basis, seeks to subject content on social media to the direct scrutiny of the Government by permitting users to appeal decisions of social media platforms to a Grievance Appellate Committee constituted by MeitY.

➥ The draft also proposes to place additional responsibilities on grievance officers. It suggests that if a user complains about content which is "patently false", infringes copyright, and threatens the integrity of India, among other things, a grievance officer will have to expeditiously address it within 72 hours.

➥ Current rules require these officers to address all content-related complaints within 15 days.

Issue with WhatsApp:

➥ The IT Rules, since implementation in May 2021, have run into several legal troubles. In 2021, WhatsApp filed a lawsuit against a particular provision in the rules which requires encrypted messaging platforms to trace the identity of the originator of a message.

➥ In its lawsuit, the company said that implementing the provision would dilute its encryption security and present a privacy-risk to users' personal conversations.

What's next?

➥ The proposal has triggered concerns about the government overriding social media companies' content decisions. Incidentally, the draft amendments were uploaded to the MeitY's website but were subsequently taken down.

SUPREME COURT OBJECTS TO FRIVOLOUS PIL PETITIONS

Why in news?

➥ A Public Interest Litigation (PIL) petitioner in the Supreme Court barely escaped having to pay Rs. 18 lakh for indulging in a "luxury litigation".

Details:

➥ A Vacation Bench of Justices B. R. Gavai and Hima Kohli initially asked the litigant to pay ₹18 lakh, that

is, Rs. 1 lakh for every one of the 18 minutes the case took up. However, the court later, in its order, slashed the amount to ₹2 lakh on the request of the litigant's counsel.

➲ This case came up shortly after the same Bench had pronounced a judgment underlining how flippant PIL petitions both encroach into valuable judicial time and stall development work undertaken by the government.

➲ It observed that "the highly derogatory practice of filing frivolous petitions encroach on valuable judicial time which can otherwise be utilised for addressing genuine concerns".

Esteem Properties Pvt. Ltd. vs ChetanKamble :

➲ However, in a February 2022 judgment in the case, Esteem Properties Pvt. Ltd. vs ChetanKamble , a three-judge Bench led by Chief Justice of India N.V. Ramana takes a balanced view of the good and the bad in the PIL petitions.

➲ In that judgment, the top court had acknowledged that "thousands of frivolous petitions are filed, burdening the docket of both the Supreme Court and the High Courts".

Positive side of PILs:

➲ But PIL petitions have also had a beneficial effect on the Indian jurisprudence and has alleviated the conditions of the citizens in general.

➲ The court in Jaipur Shahar Hindu VikasSamiti vs State of Rajasthan had emphasised how such petitions "bring justice to people who are handicapped by ignorance, indigence, illiteracy."

Directions for PILs:

➲ The Supreme Court had also issued eight directions in its Balwant Singh Chaufal judgment to help constitutional courts separate genuine PIL petitions from the barmy ones.

➲ It had asked every High Court to frame its own rules to encourage bona fide PIL petitions and curb the motivated ones.

What is a PIL?

➲ Public Interest Litigation (PIL) refers to such legal action which is initiated in a court of law in order to enforce the public interest or general interest in which the common people have some interest by which their legal right or liability is affected.

➲ The PIL is a tool to safeguard the socially disadvantaged communities who cannot represent themselves and claim justice in a court of law.

When can PIL be filed?

➲ Any Indian citizen can file a PIL, the only condition being that it should not be filed with a private interest, but in a larger public interest.

➲ PILs can be filed either in a high court or in the Supreme Court.

Who can file a PIL?

➲ Any individual or organisation can file a PIL either in his/her/their own standing i.e. to protect or enforce a right owed to him/her/them by the government or on behalf of a section of society who is disadvantaged or oppressed and is not able to enforce their own rights.

➲ The concept of "Locus Standi" has been relaxed in the case of PILs so as to enable the Court to look into grievances that are filed on behalf of those who are poor, illiterate, deprived or disabled and are unable to approach the courts themselves.

➲ However, only a person acting in good faith and who has sufficient interest in the proceeding will have the locus standi to file a PIL.

Are PILs often misused?

➲ The misuse or abuse of PILs is growing to be a serious concern for the Indian judiciary.

➲ In 2010, the Supreme Court came down heavily on frivolous PIL petitions for personal or extraneous reasons, and eventually laid down certain guidelines to be followedby courts in entertaining PILs.

➲ The filing of indiscriminate petitions "creates unnecessary strain on the judicial system and consequently leads to inordinate delay in the disposal of genuine and bona fide cases.

➲ Chief Justice N V Ramana in April said that the PIL was being widely misused and termed it as a "personal litigation system."

'eSANJEEVANI' INTEGRATED WITH NHA'S AYUSHMAN BHARAT DIGITAL MISSION (ABDM)

Why in news?

➲ The National Health Authority (NHA) announced the successful integration of eSanjeevani with its flagship scheme, Ayushman Bharat Digital Mission (ABDM).

➲ Both versions; eSanjeevani AB-HWC and eSanjeevani OPD have been integrated with ABDM platform.

Aim:

➲ ABDM aims to build digital highways to bridge the gaps in existing digital health solutions and stakeholders in India.

➲ The integration of eSanjeevani with ABDM is one such example where the 22 crore ABHA holders can link and store their health records created via eSanjeevani directly in the health lockers of their choice.

➲ The users can also share their previously linked health records with the doctors on eSanjeevani making the entire consultation process paper-less.

Significance of the integration:

➲ This integration allows the existing users of eSanjeevani, the telemedicine service of Ministry of Health and Family Welfare (MoHFW) to easily create their Ayushman Bharat Health Account (ABHA) and

use it to link and manage their existing health records like prescriptions, lab reports, etc.

➲ The users would also be able to share their health records with doctors on eSanjeevani which will help in better clinical decision making and ensuring the continuum of care.

eSanjeevaniAyushman Bharat-Health and Wellness Centre (AB-HWC):

➲ eSanjeevani service is available in two variants. The first one is eSanjeevaniAyushman Bharat-Health and Wellness Centre (AB-HWC) – the Doctor-to-Doctor telemedicine service through which the beneficiaries visiting a HWC can virtually connect to doctors/ specialists in the Hub that could be at tertiary healthcare facility/hospital/medical college.

➲ This enables the government to provide general and specialised health services in rural areas and isolated communities.

eSanjeevani OPD:

➲ The second variant, eSanjeevani OPD is serving patients across the country, connecting them directly to doctors from the comforts of their homes.

Way Forward:

➲ The eSanjeevani telemedicine platform now joins other 40 digital health applications that have completed their ABDM integration.

➲ Together, these health tech services are building a robust, inter-operable and inclusive digital health ecosystem for the country.

THE DEBATES AROUND THE SURROGACY ACT

Context:

➲ Recently, the Delhi High Court issued notice to the Centre on a petition challenging provisions of the Surrogacy Act and the Assisted Reproductive Technology (ART) Act on the ground that the laws are discriminatory against a single man desirous of being a father through surrogacy and a married woman who is desirous of expanding her family through the means of surrogacy.

➲ Petitioners in the Delhi High Court questioned why marital status, age, or gender were the criteria for being allowed to commission or not commission surrogacy in India.

Background:

➲ As per the Surrogacy Act that commissioned in from January 2022, a married couple can opt for surrogacy only on medical grounds.

➲ Additionally, the couple should not have a child of their own. Though the law allows single women to resort to surrogacy, she should either be a widow or a divorcee, between the age of 35 to 45 years. Single men are however, not eligible.

What is the Surrogacy Act?

➲ The Surrogacy (Regulation) Bill was introduced in Parliament in November 2016, and passed in the winter session of Parliament in 2021.

➲ The Act sought to regulate the surrogacy part of a rather flourishing infertility industry in the country.

➲ Defining 'surrogacy' as a practice where a woman undertakes to give birth to a child for another couple and agrees to hand over the child to them after birth, it allows 'altruistic surrogacy' , wherein only the medical expenses and insurance coverage is provided by the couple to the surrogate mother during pregnancy. No other monetary consideration will be permitted.

Why is there a need for a Surrogacy Act in India?

➲ India has emerged as a hub for infertility treatment, attracting people from the world over with its state of the art technology and competitive prices to treat infertility.

➲ Soon enough, due to prevailing socio-economic inequities, underprivileged women found an option to 'rent their wombs' and thereby make money to take care of their expenses often to facilitate a marriage, enable children to get an education, or to provide for hospitalisation or surgery for someone in the family.

➲ Once information of the availability of such wombs got out, the demand also picked up. Due to arrival

of unscrupulous middlemen into the scene and exploitation of these women began. Several instances began to emerge where women, in often desperate straits, started lodging police complaints after they did not receive the promised sum.

➲ Other issues also began to crop up. For instance, in 2008 a Japanese couple began the process with a surrogate mother in Gujarat, but before the child was born they split with both of them refusing to take the child.

➲ In 2012, an Australian couple commissioned a surrogate mother, and arbitrarily chose one of the twins that were born.

➲ The time therefore, was ripe for proper regulation.

Who all are allowed to make use of the services of a surrogate mother?

➲ Any couple that has 'proven infertility' are candidates. The 'intending couple' as the Act calls them, will be eligible if they have a 'certificate of essentiality' and a 'certificate of eligibility' issued by the appropriate authority.

➲ The former will be issued if the couple fulfils three conditions: One, a certificate of infertility of one or both from a district medical board; Two, an order of parentage and custody of the surrogate child passed by a Magistrate's court; Thirdly, insurance cover for the surrogate mother.

➲ An eligibility certificate mandates that the couple fulfil the following conditions: They should be Indian citizens who have been married for at least five years; the female must be between 23 to 50 years and the male, 26 to 55 years; they cannot have any surviving children (biological, adopted or surrogate);

➲ However, this would not include a 'child who is mentally or physically challenged or suffers from life threatening disorder or fatal illness.'

Who can become a surrogate mother?

➲ Only a close relative of the couple can be a surrogate mother, one who is able to provide a medical fitness certificate. She should have been married, with a child of her own, and must be between 25 and 35 years, but can be a surrogate mother only once.

What are the controversies behind the Act?

➲ Even at the Bill stage, while there was a general murmur of appreciation, and some strident approval from infertility experts, there was some apprehension about the too restrictive regulations. For instance, it does not allow single women, or men, or gay couples to go in for surrogacy.

➲ Others, primarily those involved in organ transplantation, pointed out how despite a similar, stringent law, the Transplantation of Human Organs Act, organ commerce continues to thrive in the country.

➲ Brokers continue to operate, though with less temerity and more covertly, sometimes with hospital authorities, to pull wool over the eyes of the appropriate authority and law enforcement officials. Clearly the issue will have to be handled with a stern visage, even as sensitivities of people are factored in.

What lies ahead?

➲ These apprehensions and perceived hitches due to the exclusionary criteria, have already come to the forefront in the short period that the Act has been operational.

➲ A path of litigation is possibly the course ahead, and if a critical mass builds up, amendments might have to be resorted to in order to resolve the grievances and ensure access for all categories of parents.

A SINGLE NODAL AGENCY (SNA)

Why in news?

➲ Given the federal structure of our democracy, bringing in reforms that actually translate into better results for the states and the Centre equally has always been a challenge.

➲ One such reform that has benefitted the states and the Centre alike has been the introduction of the State Nodal Agency bank account model for transferring funds for implementation of centrally-sponsored schemes.

Capital expenditure in India:

➲ Amidst the uncertainty caused by a host of factors, ranging from the Ukraine war to the Covid-19 pandemic, the government is focussed on tapping future opportunities by going all guns blazing on capital expenditure.

➲ The impressive strike rate of 98.5% on capital expenditure, as evident from the Revised Estimates for FY22, is a testimony to the concerted efforts of the government on streamlining processes and bringing in crucial public-finance management reforms.

Effective monitoring by SNA:

➲ The single nodal agency (SNA) model has significantly streamlined the disbursal of funds for Centrally Sponsored Schemes (CSS), which comprise nearly 20% of the total fiscal transfers and amount to nearly Rs 3.8 trillion.

➲ The initiative has brought down the float available in the CSS fund flow mechanism to a minimum, and improved the monitoring system when it comes to utilisation of funds.

➲ The government can now see financial activity via SNA, which is helping in effective monitoring of the expenditure by down-the-ladder agencies.

Working model:

➲ The SNA model requires the states to notify an SNA for each CSS which will open a unique bank account at a commercial bank responsible for all transactions related to the implementation of the particular CSS.

⮕ All other implementation agencies will either use the SNA's account or open a zero-balance subsidiary account, with drawing limits set by the SNA.

⮕ This has led to funds for CSS now being transferred to just 3,072 bank accounts instead of the 9.77 lakh accounts previously.

How it is beneficial for state governments?

⮕ The state governments, in particular, are set to benefit immensely from the shift to SNAs. By providing data on unspent balances, state government departments can now see the state-wise float available for a CSS before initiating the proposal for the fund released.

⮕ Similarly, the state can also monitor and prioritise releasing new installments of funds to districts, blocks, and gram panchayats based on their utilisation of the previously allocated funds.

⮕ The ability to see the transaction process end-to-end can improve the efficiency of the delivery mechanism. This will lead to faster and timely utilisation of funds on the ground.

⮕ Since the expenditure on the CSS is made from a single account now, the submission process for utilisation certificates has become much easier for the states.

Real-time resolution of the inefficiencies in the banking process:

⮕ The states can now monitor the interest credited by the banks and can transfer the state-share of the interest into the consolidated fund of the state. Before the new procedure, no such mechanism was available.

⮕ Also, the new mechanism today enables capturing of end-to-end transaction processes, and the performance of banks can be evaluated through key performing indicators (KPIs); SNAs can provide real-time resolution of the inefficiencies in the banking process.

⮕ For states like Assam, the introduction of zero-balance accounts has eliminated delays and ensured 'in time' availability of funds for the implementing agencies. This system has particularly benefitted the remotely-located implementing agencies with restricted access to the bank branches.

⮕ The cumbersome process of handling cheques and bank drafts has been dispensed with; statutory deductions like payments of direct and indirect taxes by the agencies, not efficiently captured earlier are now being fully complied with, thereby ensuring transparency and accountability.

⮕ SNAs will be instrumental in fast-tracking work-related schemes that entail infrastructure development on the ground, viz. the Jal Jeevan Mission. Accountability and accessibility to the status of funds released are much higher now.

SNA dashboard:

⮕ The SNA dashboard, to be released by the Finance Minister as part of the AzadikaAmritMahotsav, is going to enhance transparency in the whole process.

⮕ The dashboard will use the extensive data to make easy comparisons among states, districts, blocks, etc, decide future releases, analyse and monitor timely release of central and state share of SNAs, study the expenditure pattern, and track the utilisation of funds at the click of a button.

⮕ This will enable data-driven and better-informed decision-making.

Way Forward:

⮕ Efforts made by the Centre and the state governments have firmly established the SNA model, which has been adopted by all the states. Reforms like these are among the primary factors driving a paradigm shift in utilisation of funds across states.

⮕ So far, systemic reforms like the SNA are on the right path to bring in a bottom-up approach in the public-funds disbursal system. With time, it seems the model will be able to bring more transparency and efficiency to citizen-centric delivery mechanisms.

ELECTING RAJYA SABHA MPS

Why in news?

⮕ Ahead of Rajya Sabha elections in four states, various parties have accommodated legislators from at least three states in resorts, away from potential poaching by rival parties.

⮕ A practice frequently seen before Rajya Sabha elections, this underlines the importance parties give to seats in the Upper House.

Why are Rajya Sabha elections important?

⮕ For both the ruling party and the Opposition, every Rajya Sabha seat counts as any Bill, barring those designated as Money Bills by the Lok Sabha Speaker, needs the assent of the second chamber to become law.

⮕ Rajya Sabha, or the Council of States, has 245 seats. Leave aside reaching the halfway mark of 123,no ruling party has ever touched the 100 mark in the last three-and-a-half decades.

- The BJP-led NDA touched 100 in April but its strength is down to 95 now after the retirement of five of the nominated members who had taken BJP membership.
- Rajya Sabha has a limited role in the case of Money Bills. It cannot amend a Money Bill, but can recommend amendments within a stipulated time, and Lok Sabha may either ac cept or reject all or any of these.

How often are Rajya Sabha elections held?

- Rajya Sabha is a permanent House and cannot be dissolved.
- To ensure continuity, one third of its members retire after every second year, under Article 83(1) of the Constitution, and "biennial elections" are held to fill these vacancies. The term of a member is six years.
- Out of the 245 members, 12 are nominated by the President and 233 are representatives of the States and Union territories of Delhi and Puducherry.
- Vacancies arising due to resignation, death or disqualification are filled up through bypolls, and those elected serve out the remainder of their predecessors' term.
- Under Article 80(3), the 12 nominated members should have special knowledge or practical experience in matters like literature, science, art etc. A nominated member may join a party within six months of taking a seat.

Who votes, and how?

- Rajya Sabha MP's are elected by MLAS through an indirect election.
- Article 80(4) provides that members shall be elected by the elected members of state Assemblies through a system of proportional representation by means of a single transferable vote.
- The Fourth Schedule to the Constitution provides for allocation of Rajya Sabha seats to the states and Union Territories, on the basis of the population of each state. For instance, there are 31 Rajya Sabha seats in Uttar Pradesh and 1 in Goa.
- Elections are held there are more candidates than vacancies; otherwise, candidates are elected unopposed.

How are the votes counted?

- The number of votes a candidate requires depends on the number of vacancies and the strength of the House.
- If there is only one vacancy, the required quota under the Election Commission's Conduct of Election Rules, 1961, is calculated by taking the number of votes polled, divided it by 2, and adding 1.For example, if 100 votes are polled in an Assembly, the Rajya Sabha candidate would need100/2+1=51 votes
- If there is more than one vacancy, the equation is based on an assigned value of 100 for every first-

preference vote. The values of the votes credited to all candidates are totalled. The total is divided by 1 more than the number of vacancies, and 1 is added to this quotient.

- For example, if 100 members of an Assembly vote for 3 Rajya Sabha vacancies, the required quota by any candidate would be(100×100)/(3+1)+1=2501
- If for any seat, candidates fail to get the specified number, the second preference votes will be taken into account, but with a lower value.

How many seats are being contested in the current elections?

- Biennial elections are being held for 57 seats across 15 states. But elections were necessitated only in 16 seats from four states Haryana, Maharashtra, Rajasthan and Karnataka. The remaining 41 candidates were declared elected unopposed.

Beyond passing Bills, why do Rajya Sabha numbers matter?

- Rajya Sabha enjoys some special powers. If it passes a resolution by a majority of not less than two-thirds of members present and voting, saying that it is "necessary or expedient in the national interest" that Parliament should make a law on a matter enumerated in the State List, Parliament becomes empowered to make a law on the subject. Such a resolution remains in force for a maximum of one year but this period can be extended by one year at a time by passing a similar resolution.
- A similar route can be adopted for recommending creation of one or more All India Services common to the Union and the states. Parliament becomes empowered to create such services.
- Also, Rajya Sabha has a role to play if the President, as empowered by the Constitution, issues proclamations in the event of national emergency, in the event of failure of constitutional machinery in a State, or in the case of financial emergency". Every such proclamation has to be approved by both Houses of Parliament within a stipulated period.
- Under certain circumstances, however, Rajya Sabha enjoys special powers. If a proclamation is issued at a time when Lok Sabha has been dissolved or the dissolution of Lok Sabha takes place within the period allowed for its approval, then the proclamation remains effective, if the resolution approving it is passed by Rajya Sabha within the period specified under Articles 352, 356 and 360 of the Constitution.

WHEN CAN A RAJYA SABHA VOTE BE REJECTED?

Why in news?

- Elections for 57 Rajya Sabha seats across 15 states is on the cards. With as many as 41 candidates having already been declared elected unopposed, the contest

is on for 16 seats in four states — Maharashtra, Rajasthan, Haryana and Karnataka.

How Rajya Sabha Members are elected?

- ➲ Members of the Rajya Sabha are elected through single transferable votes via an open ballot.
- ➲ Members of a state's Legislative Assembly vote in the Rajya Sabha elections in what is called proportional representation with the single transferable vote (STV) system. Each MLA's vote is counted only once.
- ➲ There have been multiple instances in the past where the votes of MPs and MLAs have been rejected due to violation of rules.
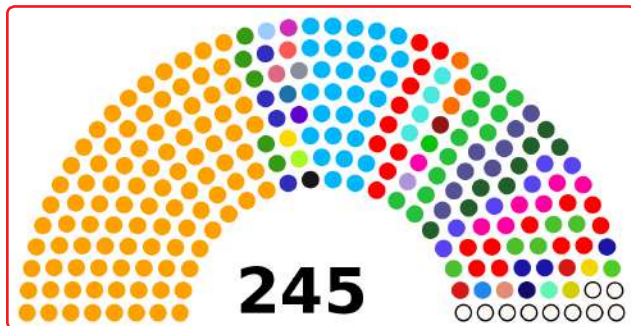
When the Election Commission turned to Article 324?

- ➲ In 2017, with the high-stakes Rajya Sabha election in Gujarat touching a nerve-racking finishing, the counting was delayed in three seats after the Congress asked the Election Commission (EC) to reject the votes of two of its rebels, who allegedly showed their ballot papers to unauthorised persons in the polling booth in Gandhinagar.
- ➲ Later, the EC disqualified two votes by Congress MLAs that were in favour of the BJP. The commission's order was made after the Congress petitioned it saying the two MLAs showed their votes to a BJP agent and therefore, stood invalid.
- ➲ The commission had invoked its constitutional powers to overrule the returning officer, who had declared the votes valid, and by doing so maintained the panel's neutrality.
- ➲ The commission turned to Article 324 of the Constitution, which gives the panel unprecedented powers to hold free-and-fair polls in situations not covered by the Representation of People's Act, the law governing the election process in India.

How can votes be rejected in an open ballot system?

- ➲ Open ballot voting applies in elections to Council of States only. Every political party which has MLAs can appoint an authorised agent to verify whom its members have voted for.
- ➲ In 2016, RandeepSurjewala's vote was rejected after he showed it to another MLA instead of his party's

authorised agent. Surjewala was an MLA in the 2016 Rajya Sabha elections in Haryana.

Can an authorised agent represent two parties simultaneously?

- ➲ No. The spirit behind Rule 39AA of the Conduct of Elections Rules, 1961 is that MLAs belonging to a political party shall show their ballot papers (after marking their vote) to the authorised agent of that party only and not to the authorised agent of other parties. As such, the same person cannot be appointed as the authorised agent of more than one party.

Can an MLA or minister be appointed as an authorized agent?

- ➲ There is no such restriction imposed by the EC in elections to the Council of States and State Legislative Council by MLAs.

Can an Independent MLA show his marked ballot paper to the authorised agent of any party?

- ➲ No, Independent MLAs are required to insert the marked ballot paper in the ballot box without showing the marked ballot to any agent.

What action is taken by the Presiding Officer/ Returning Officer in case an elector belonging to a political party refuses to show his/her marked ballot paper to the authorised agent?

- ➲ In such a case, the ballot paper issued to the elector will be taken back by the Presiding Officer, or a polling officer under the direction of the Presiding Officer, and the ballot paper will be kept in a separate envelope after recording on the reverse side of the ballot paper "Cancelled-voting procedure violates".
- ➲ A provision in sub-rules (6) to (8) of rule 39A of the Conduct of Elections Rules, 1961, shall apply in such cases.
- ➲ According to the EC, if the elector drops the ballot paper in the box without showing it to the authorised agent, then at the time of counting, the RO should first separate this concerned ballot paper and it shall not be counted.

Can votes be rejected if a ballot paper is marked with another pen?

- ➲ Yes, in the ballot paper, a MLA has to mark his or her choice of candidates by ranking them and they also have to use a special pen provided by the EC. If they use any other pen, or if their ballot papers remain incomplete, the vote would be regarded as invalid.
- ➲ In 2016, the EC directed the Haryana Police to register an FIR on the complaint of senior lawyer R K Anand against the Returning Officer for allowing the use of an unauthorised pen for voting in the Rajya Sabha election. The Congress party had alleged this was a deliberate fraud to make the party's votes invalid.

'GUIDELINES ON PREVENTION OF MISLEADING ADVERTISEMENTS AND ENDORSEMENTS FOR MISLEADING ADVERTISEMENTS, 2022'

Why in news?

⮕ Recently, the Central Consumer Protection authority (CCPA) under the Department of Consumer Affairs has notified 'Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022'.

Objective:

⮕ To curb misleading advertisements and protect the consumers, who may be exploited or affected by such advertisements.

⮕ The guidelines seek to ensure that consumers are not being fooled with unsubstantiated claims, exaggerated promises, misinformation and false claims. Such advertisements violates various rights of consumers such as right to be informed, right to choose and right to be safeguarded against potentially unsafe products and services.

Stakeholders:

⮕ These guidelines will be applicable to advertisements published on all media platforms, such as print, television, and online.

⮕ Both government and private advertisements shall be covered by the new set of rules. The guidelines define a seller and whosoever he is, whether government body or private is covered under the provisions.

Violation of the rights of the consumers:

⮕ The CCPA has been established under section 10 of the Consumer Protection Act, 2019 for regulating matters relating to violation of the rights of the consumers, unfair trade practices and false or misleading advertisements which are prejudicial to the interests of public and consumers and to promote, protect and enforce the rights of consumers as a class.

⮕ In exercise of the powers conferred by section 18 of the Consumer Protection Act, 2019, to CCPA, the Guidelines were notified.

Misleading advertisement:

⮕ Misleading advertisement has already been defined under section 2(28) of the Consumer Protection Act, 2019.

⮕ The present guidelines define "bait advertisement", "surrogate advertisement" and clearly provides what constitutes as "free claim advertisements".

Advertisement targeting children:

⮕ Keeping in view the sensitiveness and vulnerability of children and severe impact advertisements make on the younger minds, several preemptive provisions have been laid down on advertisements targeting children.

⮕ Guidelines forbid advertisements from exaggerating the features of product or service in such manner as to lead children to have unrealistic expectations of such product or service and claim any health or nutritional claims or benefits without being adequately and scientifically substantiated by a recognized body.

⮕ Guidelines says that advertisement targeting children shall not feature any personalities from the field of sports, music or cinema for products which under any law requires a health warning for such advertisement or cannot be purchased by children.

Disclaimers in advertisements:

⮕ Disclaimers in advertisements play a pivotal role from consumer perspective since, in a way it limits the responsibility of the company.

⮕ Therefore, guidelines stipulates that disclaimer shall not attempt to hide material information with respect to any claim made in such advertisement, the omission or absence of which is likely to make the advertisement deceptive or conceal its commercial intent and shall not attempt to correct a misleading claim made in an advertisement.

⮕ Further, it provides that, a disclaimer shall be in the same language as the claim made in the advertisement and the font used in a disclaimer shall be the same as that used in the claim.

Penalty:

⮕ Penalty for violating the Guidelines are also clearly outlined. CCPA can impose penalty of upto 10 lakh rupees on manufacturers, advertisers and endorsers for any misleading advertisements. For subsequent contraventions, CCPA may impose a penalty of upto 50 lakh rupees.

⮕ The Authority can prohibit the endorser of a misleading advertisement from making any endorsement for upto 1 year and for subsequent contravention, prohibition can extend upto 3 years.

Due diligence:

⮕ Similarly, clear Guidelines are laid for duties of manufacturer, service provider, advertiser and advertising agency, due diligence to be carried out before endorsing and others.

⮕ Guidelines aims to protect consumer's interest through bringing in more transparency and clarity in the way advertisements are being published, so that, consumers are able to make informed decisions

based on facts rather than false narratives and exaggerations.

UPHOLDING THE RIGHT TO REPAIR

Why in news?

➲ The U.S. state of New York recently passed the Fair Repair Act.

What should be the scope of the right?

➲ The scope of the right can only be determined in the domestic context of the country. For instance, air conditioners have largely replaced fans and coolers.

➲ An entire repair class is, in effect, denied its right to conduct business as it does not have the tools, parts, guidelines and technical know-how to repair these high-tech products. Further, the lack of certification/licensing of repair workers is seen as a reflection of their lack of skills.

➲ But a repair certification/licence can be allotted to those who pass certain criteria and skill tests. In addition to protecting their right to livelihood, it may also prove beneficial as tech companies are required to share their repair manuals with certified technicians.

Fair Repair Act

➲ It requires manufacturers to supply repair information, tools, and parts to independent repair shops and not just their own stores or partners.

➲ This provides consumers with the right to repair and refurbish their purchased goods.

➲ With access to relevant tools and repair manuals, independent repair shops will finally be able to compete with manufacturers.

➲ While this is a victory for consumer rights, privacy, security and quality concerns along with blatant intellectual property (IP) rights violations of the manufacturers cannot be sidelined.

Quality assurance clause:

➲ Manufacturers claim that the quality and functioning of the product might be adversely affected if they allow repairs by consumers and third parties. These claims are not baseless, for in the absence of supervision, who will ensure the quality of spare parts and even the repair technique.

➲ The fear of manufacturers is so potent that they incorporate warranty clauses which lapse when the product is repaired by a third party. While necessary clauses to maintain the quality of the product can be included, a blanket waiver should be avoided.

➲ For instance, the quality assurance clause can be incorporated for use of company-recommended spare parts and certified repair shops. Making repair manuals available to certified business owners could go a long way in balancing the rights of consumers and manufacturers.

➲ Additionally, manufacturers can sign a non-disclosure agreement to protect the IP with the certified repairers/businesses. Customers with access to genuine parts may also approach independent repair providers who may not offer the original manufacturer's warranty but their own warranty. The aim is to protect the rights of all stakeholders.

Adequacy of Consumer Protection Act:

➲ Often, manufacturers reduce the durability of the product, compelling consumers to either repurchase the product or get it repaired at exorbitant prices affixed by the manufacturers. Specifically, this tramples upon the right to obtain information about the quality of the product, the right to procure products at reasonable prices, and the right to seek redress against unscrupulous practices.

➲ When read closely, the 'right to repair' can be said to be implicit in Section 2(9) of the Consumer Protection Act, 2019. This warrants some relief. Its apparent disregard merits an explicit insertion of a 'right to repair' clause in the said provision.

➲ This would make consumers more aware, provide tooth to an already implicit right, and aid in advancing repair-related liability on various stakeholders, including policy recommendations, pertinent amendments and even a specific law incorporating the right to repair to better implement it.

Product liability clause:

➲ The product liability clause under Section 84 can be amended and expanded to impose product liability concerning various reparability parameters of the product. France requires manufacturers to display a repairability index on their products which consists of five parameters.

➲ This helps consumers understand if the products are repairable, difficult to repair or not repairable at all. The duration of imposing product liability may vary depending on the product and its longevity.

Conclusion:

➲ The EU's guidelines on Ecodesign for Energy-Related Products and Energy Information Regulations, 2021, mandate manufacturers to provide spare parts for up to 10 years to avoid premature obsolescence.

➲ The New York legislation is a reminder that it is time to not only acknowledge the right to repair of consumers but also respond to the corresponding rights of the manufacturers. This warrants some expedited policy changes to recognise the 'right to repair', be it through amendments in the Consumer Protection Act, 2019 or through a separate law.

HATE SPEECH, IPC SEC 295A, AND HOW COURTS HAVE READ THE LAW

Context:

➲ The debate surrounding the comments on Prophet Mohammed have put the spotlight on the law that deals with criticism of or insult to religion.

➲ Provisions in the Indian Penal Code (IPC), primarily Section 295A, define the contours of free speech and its limitations with respect to offences relating to religion.

➲ India does not have a formal legal framework for dealing with hate speech.

➲ However, a cluster of provisions, loosely termed hate speech laws, are invoked. These are primarily laws to deal with offences against religions.

Section 295A & others:

➲ Section 295A defines and prescribes a punishment for deliberate and malicious acts, intended to outrage religious feelings of any class by insulting its religion or religious beliefs.

➲ "Whoever, with deliberate and malicious intention of outraging the religious feelings of any class of citizens of India by words, either spoken or written, or by signs or by visible representations or otherwise, insults or attempts to insult the religion or the religious beliefs of that class, shall be punished with imprisonment of either description for a term which may extend to [three years], or with fine, or with both," the IPC Section 295A.

IPC chapter to penalise religious offences:

➲ Section 295A is one of the key provisions in the IPC chapter to penalise religious offences.

➲ The chapter includes offences to penalise damage or defilement of a place of worship with intent to insult the religion (Section 295); trespassing in a place of sepulture (Section 297); uttering, words, etc, with deliberate intent to wound the religious feelings of any person (Section 298); and disturbing a religious assembly (Section 296).

➲ Section 295A has been invoked on a wide range of issues from penalising political satire and seeking bans on or withdrawal of books to even political critique on social media.

➲ The state often invokes Section 295A along with Section 153A of the Indian Penal Code, which penalises promoting enmity between different groups on grounds of religion, race, place of birth, residence, language, etc, and doing acts prejudicial to maintenance of harmony and Section 505 of the IPC that punishes statements conducing to public mischief.

Section 66A of IT Act:

➲ In cases where such speech is online, Section 66A of the Information Technology Act that punishes sending offensive messages through communication services is added.

➲ In a landmark verdict in 2015, the Supreme Court struck down Section 66A as unconstitutional on the ground that the provision was "vague" and a "violation of free speech". However, the provision continues to be invoked.

Criticism:

➲ The broad, vague terms in the laws are often invoked in its misuse. Lower conviction rates for these provisions indicate that the process, where a police officer can arrest without a warrant is often the punishment. Critics have pointed out that these laws are intended for the state to step in and restore "public order" rather than protect free speech.

Origins of the law:

➲ Colonial origins of the hate speech provisions are often criticised for the assumption that Indians were susceptible to religious excitement.

➲ In First Indian Law Commission, headed by T B Macaulay who drafted the Indian Penal Code, had written to the Governor General of India in 1835 that "there is perhaps no country in which the Government has so much to apprehend from religious excitement among the people."

Section 295A was brought in 1927.

➲ The antecedents of Section 295A lie in the "communally charged atmosphere of North India in the 1920s".

➲ The amendment was a fallout of an acquittal under Section 153A of the IPC by the Lahore High Court in 1927 in Rajpaul v Emperor, popularly known as the Rangila Rasool case.

Rangila Rasool case:

➲ Rangila Rasool was a tract that had made disparaging remarks about the Prophet's private life.

➲ Cases against the first pamphlet, filed under Section 153A, were dismissed by the Punjab and Haryana High Court, which examined the question whether targeting religious figures is different from targeting religions.

➲ When a second, similar piece was published, it raised tensions. While the magistrate had convicted the publisher Rajpaul under Section 153A, the Lahore High Court held that a "scurrilous and foul attack" on a religious leader would prima facie fall under Section 153A although not every criticism.

➲ This debate in interpretation prompted the colonial government to enact Section 295A with a wider scope to address these issues.

Later cases:

➲ In 1957, the constitutionality of Section 295A was challenged in Ramji Lal Modi v State of Uttar Pradesh.

➲ The Supreme Court upheld the law on the grounds that it was brought in to preserve "public order". Public order is an exemption to the fundamental right to freedom of speech and expression and the right to religion recognised by the Constitution.

Baba Khalil Ahmed v State of Uttar Pradesh:

➲ In a 1960 ruling, in Baba Khalil Ahmed v State of Uttar Pradesh, the Supreme Court said that "malicious intent" of the accused can be determined not just from the speech in question but also from external sources.

Ramlal Puri v State of Madhya Pradesh:

➲ In 1973, in Ramlal Puri v State of Madhya Pradesh, the Supreme Court said the test to be applied is whether the speech in question offends the "ordinary man of common sense" and not the "hypersensitive man".

➲ However, these determinations are made by the court and the distinction can often be vague and vary from one judge to the other.

Baragur Ramachandrappa v State of Karnataka:

➲ In Baragur Ramachandrappa v State of Karnataka, a 2007 decision of the Supreme Court, "a pragmatic approach" was invoked in interpreting Section 295A.

➲ The state government had issued a notification banning Dharmakaarana, a Kannada novel written by award-winning author P V Narayana on the ground that it was hate speech, invoking a gamut of provisions including Section 295A.

➲ The pragmatic approach was to restore public order by "forfeiture" of a book over individual interest of free speech.

Way Ahead

➲ We need people with a vision to unite all sections of society socially and culturally, and take the country forward.

➲ For India, the whole world is one family as encapsulated in its timeless ideal, 'Vasudhaiva Kutumbakam'. It is with this spirit that we should move forward together.

➲ The government should also bring comprehensive amendments to criminal laws to prevent hate speech and expression.

DUE PROCESS OF LAW & DEMOLITIONS IN INDIA

Why in news?

➲ Recently, the Supreme Court asked the Uttar Pradesh government to follow the due process of law as far as demolitions are concerned.

What is the process to remove illegal encroachments?

➲ Under the statute of Municipal Corporation, which are different for different states, government can demolish someone's private property if the property is an unauthorised construction on government land, buildings that encroach on someone else's property, or structures that violate regulations.

> ❝❝ No (future) demolition will take place without following the process of law… ultimately, the Rule of Law must prevail. **The drive against illegal structures and encroachments must not appear as targeting one community**
>
> They are part of society… If the court does not come to the rescue of citizens, it would not be appropriate… Everything should be fair —SC bench

What does up State Corporation rules say?

➲ Uttar Pradesh authorities carry out demolition under Section 27(1) of the UP Urban Planning and Development Act, 1973.

➲ The Act states that 'Where any development has been commenced or is being carried on or has been completed in contravention of the Master Plan or without the permission approval or sanction, the Vice-Chairman may make an order directing that such development shall be removed by demolition within such period not being less than 15 days and more than 40 days from the date on which a copy of the order of removal was issued'.

➲ Any person aggrieved by an order may appeal to the Chairman against that order within thirty days. The decision of the chairman on the appeal, shall be final and shall not be questioned in any Court.

What is the rule in M.P.?

➲ Rule 12 of the Madhya Pradesh Bhumi Vikas Rules 1984 specifies that a notice needs to be sent to any person whose property violates the rules.

➲ The recipient of the notice must also be given 10 days to either leave or to make the building comply with the rules.

What is the rule in Delhi?

➲ Section 343 of the Delhi Municipal Corporation Act 1957 also provides for a notice to be served ahead of demolishing any building that has been constructed illegally, without sanction, or in violation of building bylaws. Commissioner can order the owner or occupant to demolish the building within five to 15 days. Failing this, the Commissioner may himself order the demolition of the structure.

➲ The rule also makes it clear that anybody aggrieved by the Commissioner's order can file an appeal in the Appellate Tribunal within the period specified in the demolition order. When such an appeal is filed, the tribunal can also stay the enforcement of the order.

What are the court rulings in past?

➲ In its 2008 judgment, the Supreme Court had passed an judgement while emphasising on the need for such a notice by municipal corporations and said, 'The provision appended to Section 269 of the Act in no uncertain terms provides for an opportunity of hearing before an order of demolition is passed. It is imperative in character, but the said provision had not been complied with. Had a proper show cause notice been served upon the first respondent, he could have shown that the alleged violation of the provisions of the Act is of negligible character which did not warrant an order of demolition."

➲ In 2010 judgment, the Delhi High Court described the serving of a show-cause notice to the concerned party as a mandatory requirement and said, "Before the department passes a demolition order against a party the service of the show-cause notice on the concerned person is mandated."

➲ Similarly in another judgment passed in 2019, the Supreme Court had underlined the need to follow the right procedure for such demolitions.

➲ Recently, Allahabad HC in a case had observed that the state authorities cannot demolish a property before the statutory period of the appeal came to an end.

➲ The state authorities, wherever demolition orders are passed in respect of constructions raised on the private properties under the two acts, should wait before taking any action for actual demolition till the statutory period of the appeal comes to an end.

HIGHER RETIREMENT AGE FOR SUPREME COURT & HIGH COURT JUDGES

Context:

➲ Indian judicial system has observed many changes since independence, digitalization has been on a full spree and that has helped in the efficient delivery of justice. This is reflected in the current structure of the judicial system of India.

➲ One more proposal is there, which is to increase the retirement age of the Judges of Supreme Court & High Courts from 65 to 68 years and from 62 to 65 years respectively.

➲ The proposal has been put forth to avoid the post-retirement openings and less criticism.

Background:

➲ The Ministry was responding to the recommendation of a Parliamentary Standing Committee that increasing the age of judges would help retain the existing judges, which in turn would help in reducing both vacancy and pendency of cases in the short run.

➲ One more attribute of the committee was the life expectancy, which has increased in the past.

Venkatachaliah Report:

➲ The Venkatachaliah Report (Report of the National Commission to review the working of the Constitution, 2002) recommended that the retirement age of the Judges of the High Court should be increased to 65 years and that of the Judges of the Supreme Court should be increased to 68 years. The age should be unanimous in both the Higher and Lower Courts.

➲ A half-hearted attempt was made in 2010 through Constitution (114th Amendment) Bill to increase the retirement age of High Court judges to 65.

➲ However, it was not taken up for consideration in Parliament and lapsed with the dissolution of the 15th Lok Sabha.

Uniform retirement age:

➲ About the retirement age of the Judges, there is one more suggestion that Judges should have a uniform retirement age, i.e., 68, this was opined by the Former CJI MN Venkatachaliah reiterating his 1993 suggestion.

Present strength:

➲ As of now, out of total approved strength, there are 1108 judges in 25 High Courts and 32 judges in Supreme Court.

➲ Under Article 124 of the Constitution of India, every judge of the Supreme Court of India should be appointed by the President of India with the consultation of High Court Judges and Supreme Court Judges and what is deemed to be necessary.

How increasing retirement age will be helpful?

➲ The Indian courts are suffering from a huge backlog of cases and an increase in the age of the Judges can reduce the backlog. It is estimated that there are 4.7 crore cases pending across different levels of the judiciary.

➲ Of the, 87.4% are pending in subordinate courts, 12.4% in High Courts, while as of today there are 76,852 cases pending in Supreme Court.

➲ Also, when the age of the retirement of the judges is increased, it will help in restoring the lost faith in the Indian Courts because of the delay in the justice delivery system.

➲ The increase in the retirement age will be both in the public interest and the judicial interest as the experience of the Senior Judges will lay down a great milestone in law.

➲ With the increased usage of the technology should be encouraged to streamline the work systematically.

THE TEXTBOOK CONTROVERSY IN KARNATAKA

Why in news?

➲ A textbook revision committee headed by Rohith Chakrathirtha was set up in Karnataka following a memorandum submitted by the Karnataka Brahmin Mahasabha to the Primary and Secondary Education Minister B.C. Nagesh.

- The memorandum demanded revision of Class 6 Social Science textbooks on the ground that they "hurt the sentiments of the Brahmin community."
- The Karnataka textbook revision committee was initially set up to revise Social Science textbooks from Classes 6 to 8. However, it was eventually given the responsibility to revise all textbooks from Classes 1 to 10.
- The revised textbooks have triggered opposition from various groups.

Why did the Karnataka State Brahmin Development Board object to certain sections in the textbooks?

- The Karnataka State Brahmin Development Board met with then Chief Minister B.S. Yediyurappa in December 2020 objecting to certain extracts in the Class 6 Social Science Part 1 textbook.
- One of the paragraphs it found objectionable was in chapter 5 titled "The Culture of The Vedic Period". The paragraph stated: "Offering milk, ghee and cereals to the fire during these yagnas led to the shortage of food".
- Furthermore, sections from paragraph 1 of chapter 7, 'Rise of New Religions', was found objectionable. The paragraph under the subheading "Why did the new religions emerge?" read: "During the Vedic period, rituals like Yaga and Yagna needed animal sacrifice. This affected the food production. Apart from this, food grains, milk and ghee were offered as 'Havisu' and burnt in the fire which resulted in a shortage of food. People had also believed that only through these Yagnas true liberation (Mukti) was possible. But these costly rituals were conducted by reciting Sanskrit shlokas. Sanskrit was the priests' language and common people were unable to understand it. People were in expectation of a simple path to liberation that was explained in their own language."
- The Karnataka Brahmin Mahasabha claimed that such statements in the textbooks hurt their religious sentiments and hence should be revised.
- In September 2021, a 16-member committee headed by Mr. Chakrathirtha was set up to revise textbooks from Classes I to Class 10. The committee submitted a report in March 2022 whichsparked opposition

from Dalit organisations, various writers and from two powerful communities of Karnataka, the VeerashaivaLingayat and Vokkaliga Sabha.
- The revised textbooks do not contain chapters on "The Culture of the Vedic Period", "Rise of New Religions" and "Christianity and Islam."

Why are Dalit organisations protesting against the revision?

- Outrage among Dalit organisationswas triggered due to the omission of certain details about Dr. B.R. Ambedkar in chapter 5 of the Class 9 Social Science textbook titled "Our Constitution".
- The chapter previously stated that "based on his (BR Ambedkar's) contribution to the framing of the constitution, he is called the 'Chief Architect of [the] Indian Constitution'." However, the revised textbooks only mention that "Dr. B.R. Ambedkar was the Chairman of one of the most important committees, i.e., the Drafting Committee."
- Information about Ambedkar's contribution in getting rid of untouchability in another chapter has also been tweaked.
- The revised textbook only mentions that "JyotibaPhule, Swami Vivekananda, Dr. B.R. Ambedkar and others made immense efforts to wipe out the stigma of untouchability". Dalit organisations have demanded that the lessons be reprinted and the omitted information about Ambedkar be reinstated.

Why are seers of the Veerashaiva-Lingayat community upset?

- Various Veerashaiva-Lingayat seers have raised objections against the revision of the content of chapter 3 of the Class 9 Social Science Part 1 textbook titled, "Religious Promoters and Social Reformers".
- While the previous textbook stated that "Basaveshwara was a strong opponent of the caste system and he threw away the 'Sacred thread' after his Upanayana (the thread ceremony) and went to Kudalasangama", the revised textbook has excluded this and only mentions that "after his thread ceremony, he went to Kudalasangama".
- The previous textbook had also mentioned that "Basaveshwara and his disciples advocated Veerashaiva philosophy which was based on simple human values. They rejected the numerous rituals deeply rooted in Vedic religion."
- However, the revised textbook simply states: "He reformed Veerashaivism." This has upset the Lingayatcommunity which wants the content revised to reflect the actual history of Basaveshwara.

What about the Vokkaligas?

- Leaders of the Vokkaliga community are raising objections against the textbook revision. They are accusing of insulting the Nada Geethe (state anthem) and being disrespectful to a well-known Kannada poet, Kuvempu, who wrote it.

○ The Vokkaliga Sangha and various student organisations such as the National Students' Union of India (NSUI) and the All India Students' Federation (AISF) staged a protest at Freedom Park in Bengaluru demanding the dissolution of the textbook committee headed by Mr. Chakrathirtha.

Why are writers, scholars and student organisations angry?

○ The removal of writings by various distinguished writers has sparked protests by scholars and student organisations from Karnataka. Class 10 Kannada textbooks have been revised and chapter 1 titled "Yuddha" by Sara Aboobacker, chapter 4 titled "MrugaMattuSundari" by P. Lankesh, and chapter 6, "VyagraGeethe" by A. N. Murthy Rao has been dropped.

○ The works of these writers have been replaced by a speech of the founder of the Rashtriya Swayamsevak Sangh, K. B Hedgewar, and essays by Chakravarthy Sulibele, a right-wing ideologist, and Sanskrit scholars Bannanje Govindacharya and Shathavadhani Ganesh.

THE JUDICIAL VALIDITY OF THE TALAQ-E-HASAN MODE OF DIVORCE

Why in news?

○ A public interest litigation (PIL) seeking to invalidate Talaq-e-Hasan, the prescribed Islamic way of divorce, has been filed in the Supreme Court.

What is the PIL about?

○ The petition filed by Benazir Hina, seeks to make the prescribed Islamic way of divorce Talaq-e-Hasan unconstitutional as it is violative of Articles 14, 15, 21 and 25 of the Constitution.

○ Ms. Hina, who claimed to have been unilaterally divorced through the Talaq-e-Hasan mode by her husband Yousuf, also prayed that Section 2 of the Muslim Personal Law (Shariat) Application Act, 1937 that permits Muslims to practise unilateral divorce be declared void.

○ In June, a vacation Bench of Justices A.S. Bopanna and VikramNath allowed a plea for urgent hearing of the matter.

○ It was argued that the aggrieved lady and her child would be left without a remedy if no intervention was made. The first talaq notice was given on April 19 and the second notice was issued on May 19.

○ The hearing comes almost five years after the five judge Bench had invalidated instant triple talaq in their verdict in the ShayaraBano vs the Union of India and others case in August 2017.

○ The invalidation of instant triple talaq where the court held, "What is bad in theology is bad in law as well", led to the enactment of the Muslim Women (Protection of Rights on Marriage) Act 2019.

What is instant triple talaq?

○ In instant triple talaq a man pronounces multiple divorce in one go. It has no scope for reconciliation between the feuding couple, and often ends a marriage instantly.

○ It is, as the judges held, not mentioned anywhere in the Quran which prescribes a code of divorce largely through Surah Baqarah, verses 226 to 237 and the opening six verses of Surah Talaq.

○ Incidentally, triple talaq in this manner has been banned in many Muslim countries, including Egypt, Syria, Jordan, Kuwait, Iraq, Malaysia etc.

What is Talaq-e-Hasan?

○ Unlike instant triple talaq, Talaq-e-Hasan is pronounced with a gap of at least one month or one menstrual cycle. Only a single revocable divorce takes place through the first pronouncement of Talaq-e-Hasan.

○ The husband and wife are supposed to live together after this pronouncement and have the option of rapprochement. If the couple is not able to mend fences in the intervening period and the husband does not annul divorce through word or by establishing intimacy, the talaq stays valid.

○ At the end of this month, the husband has to pronounce divorce for the second time. Likewise for the third time. After the second pronouncement too, the divorce is revocable, and the couple may resume their conjugal relationship anytime they so desire.

○ If, however, the third pronouncement is made after at least one menstrual cycle, then irrevocable divorce takes place. Significantly, no divorce can be administered when the woman is undergoing her menstrual cycle.

○ Even in the case of pregnancy, no divorce takes place. And if such a pronouncement is made, it remains in abeyance till the end of pregnancy.

Talaq-e-Hasan in Quran:

○ Unlike instant triple talaq, the Quran clearly mentions the process of Talaq-e-Hasan. According to Surah Baqarah, verse 229, "Divorce can be pronounced twice; then either honourable retention or kindly release should follow…"

➲ Likewise the opening verse of Surah Talaq states, "O Prophet, when you divorce women, divorce them for their waiting period, and compute the waiting period accurately…Do not turn them out of the homes (during the waiting period) nor should they go away…"

Are there other options of divorce apart from the Talaq-e-Hasan?

➲ The third option of divorce besides Talaq-e-Hasan and the now repudiated instant triple talaq, is Talaq-e-Ahsan. Under this form, a single pronouncement is made. Following the pronouncement, a woman has to go through iddat or a waiting period of three months.

➲ During this period the divorce can be cancelled. However, failure to annul divorce during this period results in it being finalised after which a woman is independent, and free to marry another man or stay single, as she may choose.

➲ Both Talaq-e-Hasan and Talaq-e-Ahsan enjoy legal validity in almost all Muslim countries.

Khula:

➲ A women too have a right to end an unsuccessful marriage through Khula. Here a woman gives something to the man in return for annulling the marriage.

➲ In April 2021, the Kerala High Court held this form of divorce valid. The court overruled a 49-year-old verdict in K.C. Moyin vs Nafeesa and Others (1972) that barred Muslim women from dissolving their marriage through non-judicial modes.

➲ There is some debate among Islamic scholars on the ways of Khula. Some hold that the man's consent is necessary in Khula while most say that he enjoys no such privilege.

"HEAL BY INDIA" INITIATIVE

Context:

➲ Bolstering health human resources has been a prime focus of many of the Union government's recent initiatives and policy pronouncements.

➲ The Union health Budget 2022 is in line with the Fifteenth Finance Commission's recommendations which laid a conspicuous emphasis on utilising existing capacities at the district and sub-district levels to train different cadres of health-care personnel.

➲ The Health Ministry recently released a set of implementation guidelines for a long over-due Indian public health cadre.

"Heal by India" initiative:

➲ A more recent announcement, however, raises concerns over the coherence of India's vision with respect to health human resources.

➲ The Centre under the Ayushman Bharat Digital Mission and the "Heal by India" initiative is reportedly developing an exhaustive online repository of all categories of health-care professionals in the country. Though such an innovation is much needed because of the currently fragmented nature of such data, one of its proposed primary purposes is to aid external stakeholders, viz. foreign employers and patients in finding a right Indian match for their respective needs.

➲ It is a primitive return to the widely shunned principles of liberalisation in health care, which is not only unnecessary today but also menacing.

WHO forecast for India:

➲ The concerns are legitimised by the current estimates and future projections of health manpower in India.

➲ A World Health Organization (WHO) 2020 report projected a requirement of nearly two million more doctors and nursing professionals for India in order to attain the minimum threshold ratio of health-care professionals to the population.

➲ As per a study by WHO and the Public Health Foundation of India, over and above a veritable shortage of health-care personnel and their skewed skill-mix across a number of States, their current pace of growth is unlikely to result in any significant improvement in the density or skill-mix of health-care professionals by 2030.

➲ Such inadequacies are further compounded by the legions of health-care professionals who remain inactive and outside the labour force.

➲ In the face of these colossal challenges, the current measure which aims to subtly reinforce medical tourism and worsen the out-migration of health-care professionals from the country is utterly counter-intuitive.

Soft power projection:

➲ In the mid-1990s, the General Agreement on Trade in Services (GATS) aimed to create an unprecedented scope for cross-border trade in medical and health-care services.

➲ While the health equity implications of GATShave been widely criticised, health care particularly in the post-COVID-19 era has been a fertile ground for countries to project soft power, at times even at the

expense of the nation's own health interests. A crucial distinction must always be drawn between exporting products such as vaccines and that of health-care professionals.

- The training health-care manpower entails large subsidies (even a fraction of which is hardly recovered through remittances and skill transfers), thus entailing a net drain of resources from the native country.

- A similar draw on scarce national health-care resources is laid through medical tourism which is almost always to the detriment of health equity, particularly in developing settings such as India.

- The magnitude of these could be somewhat attenuated by the use of telemedicine and virtual platforms, though the larger concerns shall persist.

- While neither medical tourism nor out-migration can or need to be dispensed with in their entirety, to pursue them actively when the country is reeling under acute shortages in an aspirational decade for health care is least warranted.

India needs a registry:

- It is also hard to justify an immediate need for this measure. While an online health-care professionals repository will certainly aid foreign stakeholders in finding their right choices, there is neither a strong demand-side desperation nor a significant supply-side scarcity preventing a market to function well in its absence.

- For instance, a recruiter from a developed country willing to hire Indian nurses and remunerate them handsomely will not be hard pressed to find suitable candidates regardless of the assistance rendered by an online repository, and the latter would only be marginally helpful.

- Rather, it is at the national and sub-national levels that such an exhaustive and updated registry of health-care professionals is the need of the hour, for addressing the many challenges and disparities in health manpower availability, distribution, and skill mix.

- This would also come to strongly complement measures such as an integrated public health cadre and the initiatives to train, deploy and retain more local manpower.

Way Forward:

- In health care, which is characterised by perennially scarce resources and huge challenges, everything revolves around identifying the priorities right.

- And no amount of political or geopolitical expediency should be allowed to undercut national health interests. It is time to go all out to address national health-care workforce challenges and heal the nation before embarking on a healing cruise of the world.

INDIA NEEDS TO DO TO REDUCE ITS FERTILISER BILL

TABLE 1
IMPORTS OF FERTILISERS AND INPUTS ($ MN)

TABLE 2
SALE OF FERTILISERS (IN LAKH METRIC TONNES)
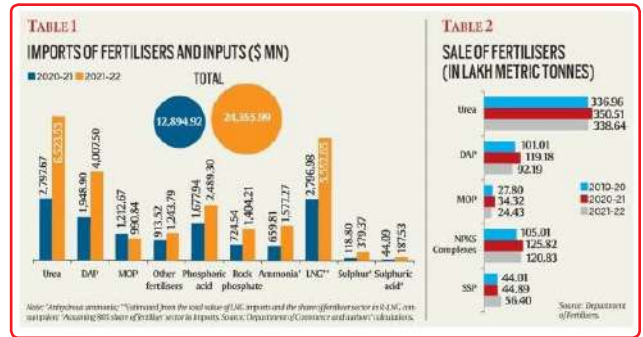
Context:

- No country has as much area under farming as India. At 169.3 million hectares (mh) in 2019, its land used for crop cultivation was higher than that of the US (160.4 mh), China (135.7 mh), Russia (123.4 mh) or Brazil (63.5 mh).

- With its perennial Himalayan rivers and average annual rainfall of nearly 1,200 mm against Russia's 475 mm, China's 650 mm and the US's 750 mm; India has no dearth of land, water and sunshine to sustain vibrant agriculture.

- But there's one resource in which the country is short and heavily import-dependent i.e. mineral fertilisers.

India's fertilizers import & production statistics:

- In 2021-22, India imported 10.16 million tonnes (mt) of urea, 5.86 mt of di-ammonium phosphate (DAP) and 2.91 mt of muriate of potash (MOP). In value terms, imports of all fertilisers touched an all-time high of $12.77 billion last fiscal.

- In 2021-22, India also produced 25.07 mt of urea, 4.22 mt of DAP, 8.33 mt of complex fertilisers (containing nitrogen-N, phosphorus-P, potassium-K and sulphur-S in different ratios) and 5.33 mt of single super phosphate (SSP).The intermediates or raw materials for the manufacture of these fertilisers were substantially imported.

Use of LNG in production of urea:

- Take urea, whose primary feedstock is natural gas. In 2021-22, India imported 23.42 mt of liquefied natural gas (LNG) valued at $13.47 billion. As per the petroleum ministry's data, the fertiliser sector's share in the consumption of re-gasified LNG was over 41 per cent. The industry's LNG imports would have, then, been worth more than $5.5 billion.

Manufacture of DAP:

- For DAP, domestic manufacturers import intermediate chemicals, namely phosphoric acid and ammonia. Some even produce phosphoric acid by importing rock phosphate and sulphuric acid. The latter can be further made from the import of sulphur.

➲ During the last fiscal, 6.44 mt of phosphoric acid, 2.31 mt of ammonia, 9.66 mt of rock phosphate, 1.92 mt of sulphuric acid and 1.90 mt of sulphur were imported into the country.

➲ Table 1 shows the total value of fertiliser imports by India, inclusive of inputs used in domestic production, was a whopping $24.3 billion in 2021-22. There are two costs here:

Cost on import:

➲ The first is foreign exchange outgo: Imports are mostly from

➲ China, Oman, UAE and Egypt (urea);

➲ China, Saudi Arabia and Morocco (DAP);

➲ Belarus, Canada, Russia, Israel and Jordan (MOP);

➲ Qatar, US, UAE and Nigeria (LNG);

➲ Morocco, Jordan, Senegal and Tunisia (phosphoric acid);

➲ Saudi Arabia and Qatar (ammonia); and

➲ Jordan, Morocco, Egypt and Togo (rock phosphate).

Fiscal cost:

➲ The second cost is fiscal. Fertilisers are not only imported, but Indian farmers also pay below what it costs to import or manufacture using imported inputs.

➲ The difference is paid as a subsidy by the government. That bill was Rs 1,53,658.11 crore or $20.6 billion in 2021-22 and projected at Rs 2,50,000 crore ($32 billion) this fiscal.

Concerns:

➲ Both costs are unsustainably high to bear for a mineral resource-poor country. India is feeling it, especially with global prices of urea, DAP, MOP, phosphoric acid, ammonia and LNG soaring two to two-and-a-half times in the last year (they have softened a bit of late).

➲ There was a time farmers had to be incentivised to use chemical fertilisers for boosting crop yields.

➲ Today, they have to be restrained from over-application. Farmers should know India imports half of its natural gas requirement and hardly has any mineable rock phosphate, potash or elemental sulphur reserves.

Roadmap for reducing fertilizer consumption in India:

➲ There is a need, first of all, to cap or even reduce consumption of high-analysis fertilisers – particularly urea (46 per cent N content), DAP (18 per cent N and 46 per cent P) and MOP (60 per cent).

➲ One way to do this is by incorporating urease and nitrification inhibition compounds in urea. These are basically chemicals that slow down the rate at which urea is hydrolysed (resulting in the production of ammonia gas and its release into the atmosphere) and nitrified (leading to below-ground loss of nitrogen through leaching).

➲ By reducing ammonia volatilisation and nitrate leaching, more nitrogen is made available to the crop, enabling farmers to harvest the same, if not better, yields with a lesser number of urea bags.

➲ Together with products such as liquid "nano urea" – their ultra-small particle size is conducive to easier absorption by the plants than with bulk fertilisers, translating into higher nitrogen use efficiency – it is possible to achieve a 20 per cent or more drop in urea consumption from the present 34-35 mt levels. That works out to 6.5-7 mt fewer imports, equivalent to $4.5-5 billion at current prices.

Promoting SSP:

➲ A second route is by promoting sales of SSP (containing 16 per cent P and 11 per cent S) and complex fertilisers such as "20:20:0:13" and "10:26:26". DAP use should be restricted mainly to paddy and wheat; other crops don't require fertilisers with 46 per cent P content.

➲ India can also import more rock phosphate to make SSP directly or it can be converted into "weak" phosphoric acid. The latter, having only about 29 per cent P (compared to 52-54 per cent in normal "strong" merchant-grade phosphoric acid), is good enough for manufacturing "20:20:0:13", "10:26:26" and other low-analysis complex fertilisers.

➲ As regards MOP, roughly three-fourths of the imported material is now applied directly and only the balance is sold after incorporating into complexes. It should be the other way around.

➲ India, to re-emphasise, needs to wean its farmers away from all high-analysis fertilisers. That movement, to use more NPKS complexes and SSP.

➲ It requires a concerted push, alongside popularising high nutrient use-efficient water-soluble fertilisers (potassium nitrate, potassium sulphate, calcium nitrate, etc) and exploiting alternative indigenous sources (for example, potash derived from molasses-based distillery spent-wash and from seaweed extract).

Way Forward:

➲ Finally, no plan to cap/reduce consumption of high-analysis fertilisers can succeed without farmers knowing what is a suitable substitute for DAP and which NPK complex or organic manure can bring down their urea application from 2.5 to 1.5 bags per acre.

➲ It calls for agriculture departments and universities not just revisiting their existing crop-wise nutrient application recommendations, but disseminating this information to farmers on a campaign mode.

NORMS TO PROTECT RIGHTS OF KIDS WORKING ON OTT PLATFORMS

Why in news?

➲ The National Commission for the Protection of Child Rights (NCPCR) has published draft guidelines to regulate child protection within the entertainment industry.

- While the "Guidelines to Regulate Child Participation in the Entertainment Industry" were issued by the Commission in 2011, this draft increases the scope of the guidelines to cover social media and OTT platforms for the first time.

Key Highlights:
- The commission has further included stringent penal provisions for violating the guidelines, including imprisonment, and has mandated that child artists and children being used in entertainment need to be registered with District Magistrates.
- Provisions under the Juvenile Justice Act, 2015, Child Labour Amendment Act, 2016, Protection of Children from Sexual Offences Act, 2012, Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, etc., have been included in the guidelines.

Scope of the new guidelines:
- The scope of the new guidelines will cover TV programmes including but not limited to reality shows, serials, news and informative media, movies, content on OTT platforms, content on social media, performing arts, advertising and any other kind of involvement of children in commercial entertainment activities.
- They will be applicable to "any relevant institution comprising but not limited to companies, organisations, or individuals involved in the production and broadcasting of such material along with the central and state government concerned".

Direction for Producers:
- Any producer of any audio-visual media production or any commercial event involving the participation of a child will now need to obtain the permission of the District Magistrate where the activity is to be performed.
- Producers will also have to run a disclaimer saying measures were taken to ensure there has been no abuse, neglect or exploitation of children during the entire process of the shooting.
- The guidelines prohibit children being cast in roles or situations that are inappropriate; consideration has to be given to the child's age, maturity, emotional or psychological development and sensitivity;

a child cannot be exposed to ridicule, insult or discouragement, harsh comments or any behaviour that could affect his/her emotional health and children cannot be shown imbibing alcohol, smoking or using any other substance or shown to be indulging in any sort of antisocial activity and delinquent behaviour. No child can be engaged in any situation involving nudity.
- Every person involved in the production who may be in contact with children will have to submit a medical fitness certificate ensuring that they are not carrying obvious contagious disease and police verification of the staff also needs to be carried out.
- The producer also needs to ensure the child's education under the RTE Act, to ensure no discontinuity from school or lessons as well as adequate and nutritious food, water to the children during the process of production and medical facilities.

Direction for Parents/guardian:
- At least one parent or legal guardian or a known person has to be present during a shoot, and for infants a registered nurse needs to be present along with the parent or legal guardian.
- A minor, especially below the age of six years, shall not be exposed to harmful lighting, irritating or contaminated cosmetics.
- A child shall only participate in one shift per day, with a break after every three hours.
- At least 20 per cent of the income earned by the child from the production or event shall be directly deposited in a fixed deposit account in a nationalised bank in the name of the child which may be credited to the child on attaining majority.
- Content created by the child or his family/guardian shall be treated as children working in a family enterprise as provided under Section 3(2)(a) of the Child Labour and Adolescent Labour Act, 1986 and shall also follow a specific procedure as laid down in this Chapter, in addition to other provisions of the Regulations, if applicable.

Way Forward:
- Now, with the boom of technology and social media, children are increasingly being used by parents/guardians for content creation generating large numbers of viewers and followers.
- It is being brought in "to ensure a healthy work environment for them with minimal physical and psychological stress".

SWACHH BHARAT MISSION- URBAN 2.0 LAUNCHES REVISED SWACHH CERTIFICATION PROTOCOLS

Why in news?
- Recently, Swachh Bharat Mission-Urban 2.0, being implemented by the Ministry of Housing and Urban

Affairs (MoHUA),has launched the Revised Swachh Certification Protocols for ODF, ODF+, ODF++, and Water+ certifications.

The revamped revised protocol is aligned with SBM-2.0 objectives and is designed to ensure:

➲ No untreated used water or faecal sludge is discharged into the environment and all used water (including sewerage and septage, grey water and black water) is safely contained, transported, and treated, along with maximum reuse of treated used water, in all cities with less than 1 lakh population.

➲ To sustain open defecation free status in all statutory towns.

➲ It contains provisions to encourage cities to have robust infrastructure with reliable Operation &Maintenance (O&M) mechanisms to achieve the goal ofclean urban India.

Key interventions against each certification are:

➲ ODF - Robust monitoring mechanism ensured by increasing the number of survey sample size and location types.

➲ ODF+ - Focus on functionality of CT/PT and innovative O&M business model for their sustainability in long run.

➲ ODF++ - Emphasis on mechanized cleaning of septic tanks and sewers. Safe collection & treatment of used water as well as safe management of faecal sludge.

➲ Water+ - The focus is on collection, transportation, treatment, and reuse of both used water and faecal sludge to prevent environmental pollution. (1) For towns having population more than 20,000, a minimum of 25% households to be connected to sewerage network. (2) Striving to achieve sustainability. (3) No untreated used water is let out intheenvironment.

Used Water Management:

➲ Swachh Bharat Mission-Urban 2.0, launched by the Prime Minister on 1st October 2022 with the overall vision of creating 'Garbage Free Cities', has introduced Used Water Management as a newly funded component for towns with less than 1 lakh population.

➲ This showcases the Mission's commitments to improving the overall Used Water Management ecosystem in Urban India by ensuring that no un-treated used water is discharged into water bodies (as per the Water+ Protocol).

➲ Under the Mission, maximum reuse of treated used water is a key area focus along with eradication of hazardous entry into sewers and septic tanks through mechanization of their cleaning operations.

Way Forward:

➲ The Revised Swachh Certification Protocols is more functionality-oriented and has been simplified for officials and citizens to understand it better.

➲ The purpose of the protocol is not only to improve rankings of cities but to motivate cities to achieve the spirit of the Mission.

INDIAN LAWS ON ABORTIONS

Context:

➲ In a significant step backwards for women's rights in the U.S., the Supreme Court overturned the landmark Roe v. Wade judgement of 1973, which gave women in America the right to have an abortion before the foetus is viable outside the womb or before the 24-28 week mark.

➲ In this context, there is need to look at the laws that govern abortion in India.

How did abortion laws come about in India?

➲ In the 1960s, in the wake of a high number of induced abortions taking place, the Union government ordered the constitution of the Shantilal Shah Committee to deliberate on the legalisation of abortion in the country.

➲ In order to reduce maternal mortality owing to unsafe abortions, the Medical Termination of Pregnancy (MTP) Act was brought into force in 1971.

➲ This law is an exception to the Indian Penal Code (IPC) provisions of 312 and 313 and sets out the rules of how and when a medical abortion can be carried out.

Section 312 & 313 of the IPC:

➲ Under Section 312 of the IPC, a person who "voluntarily causes a woman with child to miscarry" is liable for punishment, attracting a jail term of up to three years or fine or both, unless it was done in good faith where the purpose was to save the life of the pregnant woman. This section effectively makes unconditional abortion illegal in India.

⮩ Section 313 of the IPC states that a person who causes the miscarriage without the consent of the pregnant woman, whether or not she is the in the advanced stages of her pregnancy, shall be punished with life imprisonment or a jail term that could extend to 10 years, as well as a fine.

How has the MTP Act evolved from 1971 to 2021?

⮩ The latest amendment to the MTP Act was made in 2021. Before that new rules were introduced in 2003 to allow the use of then newly discovered abortion medicine misoprostol, to medically terminate a pregnancy up to seven weeks into it. Broader amendments to the original Act were introduced in 2020 and the amended Act came into force in September 2021.

⮩ Under the Medical Termination of Pregnancy (Amendment) Act, 2021, abortion is permitted after medical opinion under stipulated circumstances.

⮩ The 2021 Act increased the upper limit of the gestation period to which a woman can seek a medical abortion to 24 weeks from 20 weeks permitted in the 1971 Act. But this renewed upper limit can only be exercised in specific cases.

⮩ Gestational age, calculated in weeks, is the medical term to describe how far along the pregnancy is and is measured from the first day of the woman's last menstruation or period.

⮩ Another major amendment was that MTP could not be accessed on the opinion of a single registered medical practitioner up to 20 weeks of the gestational age. From 20 weeks up to 24 weeks, the opinion of two registered medical practitioners is required.

⮩ In the previous version of the Act, the opinion of one registered doctor was required to access a medical abortion up to 12 weeks of pregnancy, while two doctors were required to endorse the abortion up to 20 weeks.

What is the MTP (Amendment) Act, 2021?

⮩ Under the 2021 Act, medical termination of pregnancy is permitted if it is backed by medical opinion and is being sought for at least one of the following reasons—

a) If the continuation of pregnancy would involve a risk to the life of the pregnant woman

b) If its continuation would result in grave injury to the woman's physical or mental health (if the pregnancy is a result of rape or failure of contraceptive used by the pregnant woman or her partner to limit the number of children or to prevent pregnancy, the anguish caused by its continuation would be considered to be a grave injury to the mental health of the pregnant woman)

c) In the case of a substantial risk that if the child was born, it would suffer from serious physical or mental abnormality.

The pregnancy can be terminated upto 24 weeks of gestational age after the opinion of two registered medical practitioners under these conditions —

a) If the woman is either a survivor of sexual assault or rape or incest

b) If she is a minor

c) If her marital status has changed during the ongoing pregnancy (i.e. either widowhood or divorce)

d) If she has major physical disabilities or is mentally ill

e) On the grounds of foetal malformation incompatible with life or if the child is born, it would be seriously handicapped

f) If the woman is in humanitarian settings or disaster, or emergency situations as declared by the government

Other situations:

⮩ Besides, if the pregnancy has to be terminated beyond the 24-week gestational age, it can only be done on the grounds of foetal abnormalities if a four-member Medical Board, as set up in each State under the Act, gives permission to do so.

⮩ The law, notwithstanding any of the above conditions, also provides that where it is immediately necessary to save the life of the pregnant woman, abortion can be carried out at any time by a single registered medical practitioner.

⮩ Under the 2021 Act, Unmarried women can also access abortion under the above-mentioned conditions, because it does not mention the requirement of spousal consent. If the woman is a minor, however, the consent of a guardian is required.

Right to privacy:

⮩ Section 5A of the Act contains provisions for the protection of the privacy of a woman undergoing an abortion.

⮩ The registered medical practitioner cannot "reveal the name and other particulars of a woman whose pregnancy has been terminated", except to a person authorised by the law. If the doctor reveals such information in breach of the woman's privacy, they could attract a jail term of upto one year or a fine, or both.

Have there been judicial interventions in cases of abortions?

⮩ Despite the fact that existing laws do not permit unconditional abortion in the country, in the landmark 2017 Right to Privacy judgement in the Justice K.S. Puttaswamy v. Union of India and others, the Supreme Court had held that the decision by a pregnant person on whether to continue a pregnancy or not is part of such a person's right to privacy as well and, therefore, the right to life and personal liberty under Article 21 of the Constitution.

⮩ Several women annually approach the apex court and High Courts, when medical boards reject their application to access MTP beyond the gestational upper limit (now 24 weeks), seeking permission to abort a pregnancy, mostly in cases where it is a result of sexual assault or when there is a foetal abnormality.

➲ In February 2022, the Calcutta High Court allowed a 37-year-old woman, who was 34 weeks into her pregnancy, to get a medical abortion as the foetuswas diagnosed with an incurable spinal condition.

➲ The Court permitted this after the State Medical Board rejected the woman's application to get MTP. This judgment allowed abortion for the furthest gestational in the country so far.

SUPREME COURT VERDICT ON THE ZAKIA JAFRI PROTEST PETITION

Why in news?

➲ The Supreme Court dismissed the protest petition filed by Zakia Jafri, widow of late Congress leader Ehsan Jafri, challenging the clean chit given to Prime Minister Narendra Modi, then Chief Minister of Gujarat and 63 other senior officials of the State for their alleged role in the 2002 communal riots.

Supreme Court Ruling

➲ The apex court in its verdict rubbished allegations of a "larger conspiracy" in the Gulberg Housing Society case in which Ehsan Jafri was among those killed.

➲ The massacre took place shortly after the Godhra train tragedy which had claimed the lives of 59 karsevaks on February 27, 2002.

What was the apex court's verdict?

➲ The three-judge Bench headed by Justice A.M. Khanwilkar held that the inaction of "some officials of one section of the State administration" cannot be the basis to infer a pre-planned criminal conspiracy by the State government, and found no fault in the Special Investigation Team (SIT) report.

➲ There is no material worth the name to even create a suspicion indicative of the meeting of the minds of all concerned at some level; and in particular, the bureaucrats, politicians, public prosecutors or the members of the state political establishment for hatching a larger criminal conspiracy at the highest level to cause and precipitate mass violence against the minority community across the State.

➲ The Bench upheld the decision of the Additional Metropolitan Magistrate to accept the closure of the SIT, which was itself appointed by the Supreme Court in 2008 rejecting the protest petition filed by Zakia Jafri.

What were the criticisms of the Supreme Court?

➲ The court came down heavily on two State officers, Sanjiv Bhatt and R.B. Sreekumar and former Home Minister of Gujarat Haren Pandya, the falsity of whose claims had been fully exposed by the SIT after a thorough investigation.

➲ The court held that the officers were not part of the meeting to decide the future course of action when the violence had broken out on Feb 27, 2002.

➲ Mr. Bhatt had told the Supreme Court that on the night of Feb 27, 2002, Mr. Modi had asked the police brass to let the Hindus vent their anger. Likewise, Mr. Sreekumar had in his deposition before the Nanavati-Shah commission pointed to a dubious role by the administration during the violence.

SIT submitted report in 2012:

➲ Incidentally, the SIT headed by former CBI director R.K. Raghavan had submitted a closure report almost a decade ago. Back in 2012, it gave a clean chit to Mr. Modi and 63 others, finding no prosecutable evidence against them.

➲ The Metropolitan Magistrate accepted the report following which Zakia Jafri went to Gujarat High Court. In October 2017, the State High Court dismissed her petition.

➲ In September 2018, Ms. Jafri knocked the doors of the Supreme Court and filed a protest petition against acceptance of the SIT report. In December 2021, the apex court reserved its judgment.

What happened in Gulberg Society?

➲ As tensions were on a high in Ahmedabad after the Godhra tragedy, around 90 local residents had gathered at the Gulberg residence of Ehsan Jafri, hoping for safety at the former Parliamentarian's place from the mob on the rampage.

➲ Mr. Jafri, apprehending violence, called many officers and leaders for help. In the absence of any practical aid, Mr. Jafri had lost hope. Around 9.30 in the morning, the first attack took place.

➲ The police assured help but soon a mob laid siege to Gulberg Society. Gas cylinders were hurled inside the premises from outside and kerosene cans were lobbed from the road. The house was set on fire. Mr. Jafri stepped out, pleading with the mob for the life of the people inside the house.

➲ He was then dragged to the road, mutilated and then killed. His body was not recovered. Sixty-nine people were killed, as claimed by local residents; officially 39 casualties were reported.

➲ Further, as an eyewitness recalled in Rakesh Sharma's National award-winning documentary Final Solution based on the Gujarat violence, "The police removed

the names of the main culprits of the Vishwa Hindu Parishad, Bajrang Dal from the FIR. We were offered money to take the case back, not to recognise the culprits."

What has been the aftermath of the verdict?

- Within hours of the Supreme Court judgment, human rights activist TeestaSetalvad, said to be behind Ms. Jafri's prolonged legal battle, was detained by the police.
- Mr. Sreekumar was also arrested. Mr. Bhatt is already under custody.

PERFORMANCE GRADING INDEX FOR DISTRICTS (PGI-D) FOR THE YEAR 2018-19 AND 2019-20

Grade sheet

Three States, Punjab, Tamil Nadu and Kerala, attained a score of more than 900 out of 1,000 in the Education Ministry's Performance Grading Index for 2019-20

PGI SCORE (2019-20)

545   929

Punjab **929**
Bihar **747**
Gujarat **884**
Maharashtra **869**
Telangana **772**
Karnataka **813**
Andhra Pradesh **811**
Kerala **901**
Tamil Nadu **906**
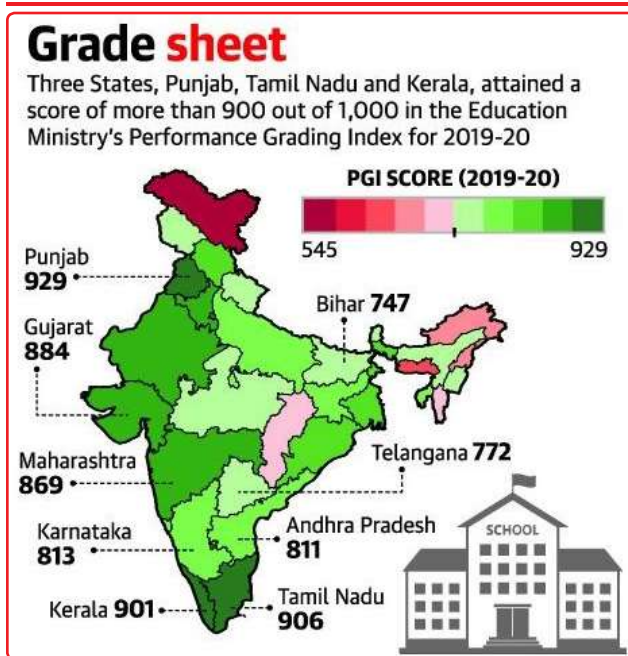
Why in news?

- Recently, the Department of School Education and Literacy (DoSE&L), Ministry of Education released the Performance Grading Index for Districts (PGI-D) for 2018-19 and 2019-20.
- It assesses the performance of school education system at the District level by creating an index for comprehensive analysis.

Significance:

- Based on the success of State PGI, 83-indicator based PGI for District (PGI-D) has been designed to grade the performance of all districts in school education.
- The data is filled by districts through online portal. The PGI-D is expected to help the state education departments to identify gaps at the district level and improve their performance in a decentralized manner.
- The indicator-wise PGI score shows the areas where a district needs to improve.

Structure of Performance Grading Index for Districts (PGI-D):

- The PGI-D structure comprises of total weight age of 600 points across 83 indicators, which are grouped under 6 categories viz., Outcomes, Effective Classroom Transaction, Infrastructure Facilities & Student's Entitlements, School Safety & Child Protection, Digital Learning and Governance Process.
- These categories are further divided into 12 domains, viz., Learning Outcomes and Quality (LO), Access Outcomes (AO), Teacher Availability and Professional Development Outcomes (TAPDO), Learning Management (LM), Learning Enrichment Activities (LEA), Infrastructure, Facilities, Student Entitlements (IF&SE), School Safety and Child Protection (SS&CP), Digital Learning (DL), Funds convergence and utilization (FCV), Enhancing CRCs Performance (CRCP), Attendance Monitoring Systems (AMS) and School Leadership Development (SLD).
- PGI-D grades the districts into ten grades viz., Highest achievable Grade is Daksh, which is for Districts scoring more than 90% of the total points in that category or overall.
- The lowest grade in PGI-D is called Akanshi-3 which is for scores upto10% of the total points.

Way Forward:

- The Indian Education System is one of the largest in the world with about 15 lakh schools, 97 lakh teachers, and nearly 26 crore students from varied socio-economic backgrounds.
- Ultimate objective of PGI-D is to help the districts to priorities areas for intervention in school education and thus improve to reach the highest grade.

FROM HIGHER TO HIRE EDUCATION

Context:

- Higher education policy planners and regulators are busy giving shape to the digital university, which was announced in the 2022-23 Union Budget.
- Though still on the drawing board, the digital university is expected to offer any number, kind, and type of course without limits on intake, in a hybrid or 'physical plus digital' mode.
- It proclaims to provide equitable access to quality higher education and employability-enhancing skill development programmes to all.

Private open universities:

- In the interim, the University Grants Commission has relaxed the norms and standards for setting up open universities.
- In particular, land requirement has been reduced from 40 acres to just five acres. This is likely to open the floodgates for private open universities.
- Simultaneously, more universities are being enabled to offer courses in the distance, open and online

mode, mostly in collaboration with EdTech startups and unicorns.

➲ In the process, higher education is now getting delivered by for-profit entities, in contravention of the long-held belief that education at all levels must be provided on a not-for-profit basis.

Remote learning with technological advancement:

➲ Information Communication and Entertainment technologies, augmented and virtual realities, artificial intelligence and machine learning are being touted as technologies with immense possibilities for transforming the delivery of education.

➲ The higher education horizon appears densely dotted with EdTech startups and tech companies as higher education aggregators.

➲ Technology-enabled and mediated digital learning is projected as the future of higher education. Such learning is supposed to end face-to-face formal education.

➲ Two years of COVID-19-compelled online education seems to have convinced them that in future, education, particularly higher education, will transform into a virtual space.

Digital divide:

➲ Evidence of massive learning losses due to the digital divide, but primarily due to the inherent limitations of technology, are being regarded as mere teething troubles.

➲ Sold to the idea, policy planners and regulators are aggressively pushing the distance, open, virtual, and online modes of education.

➲ Going by the evidence, employers across the world are generally negatively disposed towards this. Most recruiters prefer to hire those who have graduated in face-to-face mode.

Regulations for online & virtual education:

➲ Even the strongest proponents of online and virtual education feel that such programmes be subjected to stricter oversight, tighter regulations, and rigorous processes to ensure high standards and robust quality control.

➲ Given the fact that the quality of higher education is inversely proportional to the intensity of regulation,

designing and developing an efficient and effective regulatory mechanism often proves more challenging than imagined.

➲ The open and distance mode of learning, including the latest model based on digital and virtual delivery, often finds favour with the government due to cost considerations. It is, however, wrong to assume that these are economical and cost-effective.

➲ To be effective, they not only require massive capital investment in infrastructure, but also demand a significantly higher recurring expenses on content development and their continuous updating and upgradation.

No substitute for teachers:

➲ Digital delivery and technology integration in education may undoubtedly serve a useful purpose. Higher education must indeed embrace and keep pace with the advancements in technology. Technology can be effectively leveraged as a quality-enhancement tool.

➲ It would, however, be a blunder to regard technology-mediated teaching-learning as an alternative to face-to-face education. Technology can supplement and not substitute teachers.

Way Forward:

➲ No world-class universities, including those with a high degree of technology integration in their teaching and learning processes, are planning to cut down their faculty cost or their number any time soon. On the contrary, they envision hiring more of them to attain greater excellence.

➲ India cannot be an exception to this. Higher education is a lot more than borrowing content and delivering them online or outsourcing content. This would render India a consumer of knowledge.

INTERNATIONAL RELATION

WORLD SUMMIT OF INFORMATION SOCIETY (WSIS) 2022

Why in news?

➲ Recently, Minister of State for Communications, attended the opening ceremony of World Summit of Information Society (WSIS) 2022.

About WSIS:

➲ WSIS is being organized by International Telecommunications Unions(ITU) at its headquarter in Geneva, Switzerland from 30th May to 3rd June, 2022.

➲ It's beginning of 4 days event where India will showcase its telecom prowess during multilateral & bilateral engagements.

India's focus on digital development:

➲ In India, Digital inclusion is at the heart of financial inclusion and inclusive economic development.

- The government is putting conscious and consistent efforts to provide reliable ICT infrastructure in this endeavor.
- Over six hundred villages are being connected on Optical Fibre cable, with nearly 175,000 already connected. Villages left out of 4G connectivity are being covered through Universal Service Obligation Fund (USOF).
- Given the difficulty in laying optical fibre networks in hilly and mountainous terrains, focus is on the use of technologies that can accelerate development and bridge this divide, like using E band wireless carriers, LEO and MEO satellite connectivity among others.

New technologies for bridging digital divide:

- Affordable broadband accessibility is the essence of digital inclusion.
- Developing 5G test bed, indigenous 4G and 5G stack, development of Indian 5G standards and setting up of 6G innovation forum are the initiatives to reduce cost, facilitate faster 5G spread in rural area and eliminate dependency on specific vendor.

Low mobility Large Coverage Standard:

- The Telecom Standards Development Society of India, India's Standards Development Organisation, along with IITs have developed the Low mobility Large Coverage Standard (earlier called 5Gi) using a new waveform that enables 5G towers to cover wider areas in rural and remote areas.
- These standards were among the first 5G standards, which have been approved by the ITU and have also become part of Globally harmonized 3GPP Release 17 standards.
- These will be immensely helpful for countries with similar geographical spread. India is poised to play a leadership role in global digital revolution.

India & ITU:

- The participation comes with India contesting the re-election to the ITU Council, for the term 2023-2026.
- India has been a member of ITU, since 1869 and has been continuously participating, actively in the works, and activities of the Union.

EUROPEAN UNION'S BAN ON RUSSIAN OIL

Why in news?

- As part of the sixth package of sanctions since Russia's invasion of Ukraine, the European Union member states reached an agreement to ban 90% of Russian crude oil imports by the end of 2022.
- The partial embargo exempts pipeline oil in order to bypass Hungary's objections to the ban.

What was the original proposal of the oil embargo?

- The proposal to completely phase out Russian crude and refined products from EU territory within a time frame of six to eight months was first mooted by European Commission President in early May.

- A complete import ban on all Russian oil, seaborne and pipeline crude and refined was soughed.

What was the rationale behind such a move?

- The Russian economy is heavily dependent on energy exports, with the EU paying billions of dollars every month to Russia for its crude and refined products. The EU wants to block this massive revenue inflow which, as repeatedly pointed out by Ukrainian President, is akin to Europeans bankrolling Russia's war.
- The EU has been attempting, ever since the Ukraine invasion, to build consensus on ways to hurt Russia economically so that it is forced to roll back its military offensive.
- The most obvious route was to stop buying Russian energy, which isn't easy given European households' dependence on Russian oil and gas.
- However, in the context of two long term EU objectives; reducing fossil fuel dependence in favour of renewables, and eliminating dependence on Russian energy for greater strategic autonomy and energy security member states agreed to make a start by phasing out Russian oil.

What are the terms of the 'compromise deal' that has been agreed upon?

- The main departure from the original proposal is the "temporary exemption" from the oil embargo for countries that import Russian crude via pipeline.
- The EU leaders have, in principle, agreed to ban all seaborne imports of Russian crude, which account for two-thirds of EU's oil imports from Russia. However, with Germany and Poland pledging to phase out even their pipeline imports from Russia by the end of the year, the embargo would eliminate 90% of Russian oil imports.
- The remaining 10% that's been allowed represents a free pass for Hungary, the Czech Republic, Slovakia, and Bulgaria to continue imports via the Druzhba pipeline, the world's largest oil pipeline network.
- Additionally, Hungary has obtained a guarantee that it could even import seaborne Russian oil in case of a disruption to their pipeline supplies. This was deemed a legitimate concession since the pipelines do pass through the war zone in Ukraine.

Temporary exemption from the oil embargo for countries that import Russian crude via pipeline.

The remaining 10% that's been allowed represents a free pass for Hungary, the Czech Republic, Slovakia, and Bulgaria.

The EU leaders have, agreed to ban all seaborne imports of Russian crude

Hungary has obtained a guarantee that it could even import seaborne Russian oil in case of a disruption to their pipeline supplies.

Why was exemption given for pipeline imports?

➲ The exemption for pipeline imports was made on the logic that landlocked countries (Hungary, Czech Republic and Slovakia) that are heavily dependent on Russian pipeline oil do not have a ready option to switch to alternative sources in the absence of ports.

➲ While Hungary imports 65% of its oil via pipeline from Russia, 50% of the Czech Republic's oil imports are Russian, while Slovakia gets 100% of its oil from Russia.

➲ Bulgaria, which gets 60% of its oil from Russia, is not landlocked. But its refineries at present are only equipped to process Russian crude.

➲ Until it invests in infrastructure to be able to process non-Russian crude delivered to its ports, it wants to be able to continue importing Russian oil via pipeline and has accordingly claimed the exemption.

Do the exemptions dilute the embargo?

➲ EU leaders have countered this criticism by pointing out that even a partial (90%) embargo on Russian oil represents tremendous progress in terms of weaning EU off Russian oil.

➲ Secondly, they have reiterated that even the exemption for pipeline imports is not permanent and will be revisited soon. However, no timeline has been specified for a total ban on pipeline imports.

Are there other elements in the sixth package of sanctions?

➲ Apart from the oil embargo, the sixth package of sanctions also contains other tough measures against Russia.

➲ These include cutting off Sberbank, Russia's largest bank that holds one-third of Russian banking assets, from the SWIFT messaging system; a ban on three Russian-owned broadcasting networks from the EU; sanctions on individuals responsible for war crimes in Ukraine; and a ban on EU-based firms offering

insurance, financing, brokering or any other technical services related to the transport of oil to Russian ships, a measure aimed at curbing Russia's ability to divert its oil to non-EU destinations.

What about import of Russian gas?

➲ Compared to Russian oil, Europe's dependence on Russian gas is much greater, and this embargo leaves the import of Russian gas, which accounts of 40% of Europe's natural gas imports untouched.

➲ In other words, Europe will continue to pay Russia for gas imports. But since crude is more expensive than natural gas, the oil ban is expected to hurt Russian revenues.

How has India responded to these developments?

➲ India ramped up purchases of Russian crude at discounted prices in the months following the Russian invasion, and this policy is expected to continue.

➲ The announcement of the EU ban caused an immediate surge in oil prices, and as Europe seeks alternate sources, from West Asia, Africa and elsewhere for its oil needs, prices are expected to stay high.

➲ In this context, with Russia reportedly offering discounts of $30-35 per barrel, India has found it convenient to make the most of the cheap Russian crude on offer.

CHINA'S GROWING FOOTPRINT IN THE PACIFIC ISLANDS

Why in news?

➲ Wang Yi, the Foreign Minister of China, is currently on an eight-day visit to ten Pacific Island Countries (PICs), and has co-hosted with Fiji the Second China-Pacific Island Countries Foreign Ministers Meeting recently.

China's friends and relations in the Pacific
Seven Pacific Island nations officially recognise the People's Republic of China. Six recognise Taiwan.
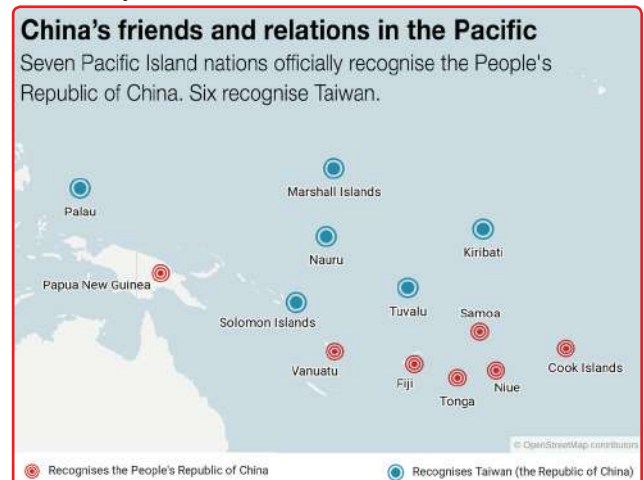
Why it matters?

➲ During the meeting, China's effort to push through a comprehensive framework deal, failed to gain consensus among the PICs.

➲ Though this has raised regional concerns about China's growing footprint in the Pacific islands, it has also been seen as a demonstration of China's limitations in the region.

About Pacific Island Countries:

➲ The Pacific Island Countries are a cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean between Asia, Australia and the Americas.

➲ They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

➲ The islands are divided on the basis of physical and human geography into three distinct parts — Micronesia, Melanesia and Polynesia.

What is the strategic significance of the PICs?

Economic potential:

➲ The islands are very small in land area, and are spread wide across the vast equatorial swathe of the Pacific Ocean. As a result, though they are some of the smallest and least populated states, they have some of the largest Exclusive Economic Zones (EEZs) in the world.

➲ Large EEZs translate into huge economic potential due to the possibility of utilising the wealth of fisheries, energy, minerals and other marine resources present in such zones. Hence, they prefer to be identified as Big Ocean States, rather than Small Island States.

➲ In fact, Kiribati and FSM, both PICs, having EEZs larger than that of India.

Strategic capabilities:

➲ Moreover, these countries have played an important role in major power rivalry as springboards for power projection and laboratories for developing and demonstrating strategic capabilities.

➲ The major powers of the colonial era competed with each other to gain control over these strategic territories.

➲ The Pacific islands also acted as one of the major theatres of conflict during the Second World War, between imperial Japan and the U.S. Due to the remoteness of these islands from the Soviet Union and major population centres of the world, some of the major nuclear weapon test sites of the U.S., the U.K. and France were located here.

➲ In addition, the 14 PICs, bound together by shared economic and security concerns, account for as many number of votes in the United Nations, and act as a potential vote bank for major powers to mobilise international opinion.

What does China seek to achieve from the PICs and how?

➲ China does not have any particular historical linkages to the PICs unlike the Western powers. Therefore, its interest in the PICs is of relatively recent origin, and is linked to China's rise in the past few decades.

➲ The PICs lie in the natural line of expansion of China's maritime interest and naval power. They are located beyond China's 'First Island Chain', which represents the country's first threshold of maritime expansion.

➲ The PICs are located geostrategically in what is referred to by China as its 'Far Seas', the control of which will make China an effective Blue Water capable Navy, an essential prerequisite for becoming a superpower.

➲ At a time when the Quadrilateral Security Dialogue has emerged as a major force in the Indo-Pacific vis-à-vis China, the need to influence the PICs have become an even more pressing matter for China.

Taiwan factor:

➲ Apart from the vast marine richness of the PICs, the Taiwan factor plays a major role in China's Pacific calculus. China, which considers Taiwan to be a breakaway territory, is preparing for what seems like an inevitable military invasion.

➲ In this context, it becomes important to break Western domination of island chains of the Pacific which could impede reunification. Wooing the PICs away from the West and Taiwan will therefore make the goal of Taiwan's reunification easier for China.

➲ It has to be noted here that a zero-sum game has been underway in the past few decades in the Pacific between China and Taiwan in terms of gaining diplomatic recognition.

➲ China has been successful in getting diplomatic recognition from 10 out of the 14 PICs through its economic largesse. Only four PICs — Tuvalu, Palau, Marshall Islands and Nauru, currently recognise Taiwan.

What are the implications of China's latest move?

➲ China has increasingly started talking about security cooperation in addition to its economic diplomacy towards the PICs.

➲ In April 2022, China signed a controversial security deal with the Solomon Islands, which raised regional concerns.

➲ Prior to the current visit of Wang Yi, two draft documents prepared by the Chinese side were leaked, and gained the attention of regional leaders in the Pacific as well as the larger international community.

➲ One of the documents is the "China-Pacific Island Countries (PICs) Common Development Vision", and the other is "China-Pacific Islands Five-Year Action Plan on Common Development (2022-2026)". The vision gives a broad proposal about co-operation in the political, security, economic and strategic areas, whereas the action plan outlines the more specific details of co-operation in the identified areas. The secrecy surrounding the draft, and the haste with which it was discussed with the governments of the

PICs during the meeting sent worrying signals across the Pacific.

- The PICs as a collective did not agree to China's extensive and ambitious proposals, and therefore China failed to get a consensus on the deal.

Caution by consensus among the PICs:

- In fact, the Prime Minister of FSM had sent a letter to all the PIC governments prior to the meeting, to consider China's proposals with caution, as they could have negative implications for the sovereignty and unity of PICs and may drag them into major power conflicts in the future.
- Some have argued that China has acted too boldly and has therefore met with such a debacle. China might have also miscalculated the regional reaction, perhaps led by a monolithic understanding of the PICs after seeing Solomon Islands' positive response earlier this year.
- However, China can always come back with improvised plan which is more acceptable and use it to further pursue its final objectives incrementally. Moreover, this debacle does not stop China from pursuing bilateral deals of similar nature.

What it translates for U.S. and Australia?

- The intensification of China's diplomacy towards the Pacific Islands have made the powers who have traditionally controlled the regional dynamics like the U.S. and Australia more cautious.
- The U.S. has started revisiting its diplomatic priority for the region ever since the China-Solomon Islands deal.
- The role played by the U.S. in mobilising opposition against China's proposed deal could not be ruled out as FSM is the only country which recognises China and at the same time is part of the Compact of Free Association with the U.S.
- Australia, in the meanwhile, has sent its new Foreign Secretary to the islands for revitalising ties, with promises of due priority and assistance to the PICs.

Way Forward:

- Chinese Foreign Minister may leave the Pacific humbled at the end of his visit, but with more insights; the Western powers may have been relieved, but may have turned more vigilant; and the PICs may have become more united than ever before.

THE UKRAINE WAR AND THE GLOBAL FOOD CRISIS

Why in news?

- Russia's invasion of Ukraine and the subsequent sanctions on its economy have sent global food prices soaring, threatening to push millions of people, especially those in low-income countries, into starvation.

UN intervention:

- Ukraine and its allies in the West have accused Russia of weaponising food, saying that its blockade of Ukraine's Black Sea ports is the primary reason for the rising prices, while Russia has blamed Western sanctions for the crisis.
- As the war, in its fourth month now, is still raging in Ukraine's east with no political solution on the horizon, the United Nations and Turkey have initiated talks with the Russian leadership to facilitate the exports of grains and fertilizers from Russia and Ukraine.

Why the War in Ukraine Threatens Global Food Security

Ukraine's and Russia's share in global exports of selected crops (2016-2020 average)

■ Ukraine ■ Russian Federation

Crop	Ukraine	Russian Federation
Wheat	9%	18%
Barley	11%	12%
Maize	13%	3%
Rapeseed	10%	2%
Sunflower-seed	2%	8%

Source: Food and Agriculture Organization of the United Nations
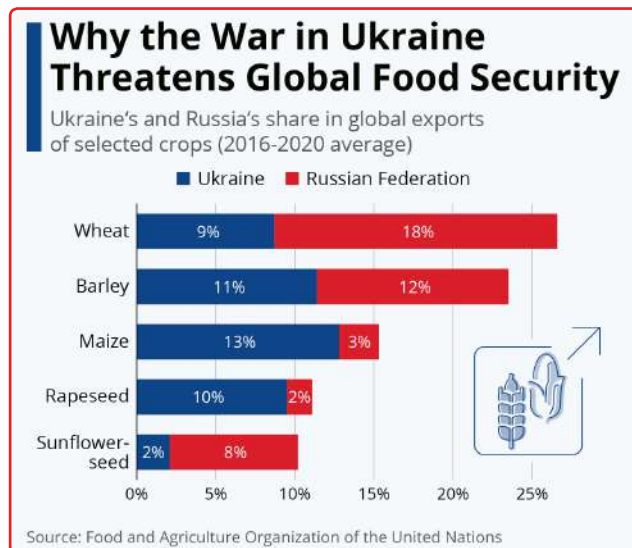
How serious is the food crisis?

- Many countries were facing growing food insecurity even before Russia's war. Climate shocks, conflicts and the COVID-19 pandemic had disrupted supply chains, pumping up prices of both commodities and crops. The war in Ukraine has aggravated this situation.
- As of June 1, 2022, the Agricultural Price Index was 40% higher compared to January 2021, according to the World Bank. Maize and wheat prices rose 42% and 60%, respectively, from the levels of January 2021. Global food, fuel and fertilizer prices are projected to be sharply higher this year and will remain elevated into 2024.

Developed nations:

- Almost all economies in the world have been hit by higher food prices. Across the western world, there's a cost-of-living crisis with food and energy prices rocketing.
- In the U.S., Treasury Secretary told senators that the country was facing "unacceptable levels of inflation" which would stay so in the coming years.
- In the U.K., inflation numbers have already hit a 40-year high. Almost 90% of emerging markets and developing economies experienced food price inflation greater than 5% this year.

Low-income countries:

➲ Low-income countries that are reliant on imports for basic food consumption, are the hardest hit.

➲ According to the UN World Food Programme (WFP), Ethiopia, Nigeria, South Sudan and Yemen remain at 'highest alert' as hotspots with "catastrophic conditions", as Afghanistan and Somalia are added to this category.

How important are Russia and Ukraine for global food security?

➲ Russia and Ukraine together account for more than a quarter of the world's wheat supplies. Russia's share in the global exports of wheat, the world's most widely grown crop, is some 20%, while Ukraine accounts for 8%, according to the U.S. Food and Drug Administration's Foreign Agricultural Service (FAS).

➲ Wheat is a staple food for at least 35% of the world's population, as per the estimates of the UN Food and Agriculture Organization (FAO). About 50 countries depend on Russia and Ukraine for more than 30% of their wheat imports, according to the FAO.

➲ If Azerbaijan and Georgia source more than 80% of their imported wheat from Russia and Ukraine, Turkey, Egypt, Bangladesh and Lebanon meet over 60% of their imports from these two countries.

➲ Besides wheat, Ukraine is the world's eighth largest producer and fourth largest exporter of corn, accounting for 16% of global exports.

➲ Furthermore, Ukraine, which produces up to 46% of sunflower-seed and safflower oil is the world's largest exporter of sunflower oil. So, the war and the sanctions have clearly hit the world's bread basket region, adding pressure on food prices.

What is causing the crisis?

➲ Before the Russian invasion of Ukraine started, Ukraine had the capacity to export up to six million tonnes of wheat, barley and maize a month, mainly through its ports in the Black Sea/Sea of Azov.

➲ Butexports have collapsed since the invasion as the Russian war effort is entirely focused on Ukraine's eastern and southern parts along the Black Sea/Sea of Azov coast.

➲ Now, several Ukrainian port cities, including Mariupol, Kherson and Berdyansk, are under Russian control.

Blockade in Black Sea:

➲ Although the southern cities of Mykolaiv and Odessa, which is known as the 'Pearl of the Black Sea', are still with the Ukrainians, commercial ships cannot dock at these ports because of two reasons;

➲ Ukraine has mined the waters around these ports as a deterrent against potential Russian attacks and Russia has enforced a naval blockade in the waters of the Black Sea.

Western sanction on Russia:

➲ Besides the blockade, the western sanctions on Russia are also contributing to the crisis. Russia, besides being the world's top wheat exporter, is also a leading exporter of fertilizer, an essential commodity for food production.

➲ Russia and its ally Belarus together account for some 38% of potassic fertilizers, 17% of compound fertilizers, and 15% of nitrogenous fertilizers. Fertilizer prices are also on the rise, which would make food production costlier.

➲ Russia's food and fertilizer sectors were not directly targeted by western sanctions, but the sanctions on its financial sector, which made payments difficult for Russia, has complicated its exports, including food grains. Also, the targeted sanctions on Russian oligarchs have choked finances for the agricultural industry.

Is there a way out?

Russia's stand:

➲ Russia has suggested that it would resume exports (not sure whether Ukrainian or Russian grains) from the ports on the Sea of Azov that it controls (Mariupol and Berdyansk) and that it would open a corridor for commercial vessels in the Black Sea if Ukraine demines the ports it controls (mainly Odessa and Mykolaiv).

➲ But these proposals could be implemented only as part of a deal between Russia and Ukraine, with blessings from the West as Russia seeks sanctions relief in return for opening the maritime corridor. No breakthrough has been achieved so far.

Options before Ukraine:

➲ Ukraine has little good options to ship its grains out of the country if its ports remain blockaded.

➲ One option is to transfer the grains overland to the Baltic States, either through Poland or Belarus, and then ship them out from the Baltic Sea ports. It has dismissed the proposal to seek help from Belarus, a Russian ally that also faces western sanctions.

➲ The U.S. State Department also stays staunchly opposed to giving any concession to Belarus in return for help for moving food grains. Moving them overland via Poland is challenging because the rail track gauge in Poland is smaller than that of former Soviet countries such as Ukraine and the Baltic states, this means cargoes will have to be moved to different trains at the Polish-Ukraine border and then again at the Polish-Lithuania border to start exporting them from the Baltic ports.

Way Forward:

➲ So, the only practical solution to take Ukrainian grains to the global markets is to open the Black Sea routes.

⊃ And to ease the pressure on global food items, Russia will also have to step up exports of both grains and fertilizers. For this, Ukraine and its allies may have to strike a deal with Russian President Vladimir Putin.

WHAT IS THE ORGANISATION OF ISLAMIC COOPERATION?

Why in news?

⊃ Recently, the Organisation of Islamic Cooperation (OIC) Secretariat "condemned and denounced" the comments on Prophet Muhammed.

⊃ Referring to it as part of "growing spate of hatred and defamation of Islam in India", it sought that the perpetrators are bought to justice and held accountable.]

India's association with PIC:

⊃ India's association with the 57-nation grouping has not been easy. Even though the country has good relations with the United Arab Emirates (UAE) and Saudi Arabia, its membership and engagement has been constantly challenged by Pakistan.

⊃ In 1969, Islamabad's opposition to Indian participation at the first OIC Plenary resulted in the Indian delegation being turned back from the venue at the last minute.

⊃ Fifty years later, External Affairs Minister SushmaSwaraj addressed the OIC Plenary of Foreign Ministers in Abu Dhabi as a guest of honour. The invitation was extended by the UAE's Foreign Minister Sheikh Abdullah bin Zayed Al Nahyan. Bangladesh, too, wanted India to be accorded the 'observer' status in 2006 again opposed by Pakistan.

What is the grouping about?

⊃ The OIC claims to be the "collective voice of the Muslim world". It was established at a 1969 summit in Rabat (Morocco) after what it describes as the 'criminal arson' of Al-Aqsa Mosque in Jerusalem.

⊃ The OIC endeavours to establish solidarity among member states, support restoration of complete sovereignty and territorial integrity of any member state under occupation; protect, defend and combat defamation of Islam, prevent growing dissention in Muslim societies and work to ensure that member states take a united stand at the U. N. General Assembly, Human Rights Council and other international fora.

⊃ The OIC has consultative and cooperative relations with U. N. and other inter-governmental organisationsto protect the interest of Muslims, and settle conflicts and disputes involving member states, among them being the territorial conflict between Armenia and Azerbaijan and the status of Jammu & Kashmir.

⊃ Presently based in Jeddah, the organisation plans to permanently move its headquarters to East Jerusalem once the disputed city is 'liberated'. Moreover, it aspires to hold Israel accountable for 'war crimes' and violations of international law.

OIC charter:

⊃ The organisation adheres to a charter that lays out its objectives, principles and operating mechanism. First adopted in 1972, the charter has been revised multiple times in line with emerging conditions in the developing world.

⊃ The present charter was adopted in March 2008 at Dakar in Senegal. It enshrines that all members be guided and inspired by the noble Islamic teachings and values alongside committing themselves to the purposes and principles of the U. N. charter. Member states are expected to uphold and promote good governance, democracy, human rights, fundamental freedom and the rule of law — settling disputes through peaceful means and refrain from the use of threat or force.

⊃ In addition, the OIC carves out a Ten-Year Programme of Action. Last instituted for the decade ending 2025, the PoA calls for measures to combat all aspects of terrorism globally. It also talks of implementing social schemes to eliminate two-thirds of extreme poverty and spurring industrialisation, investment, trade and overall economic and social growth among member states.

How does OIC function?

⊃ U. N. members with a Muslim majority can join the organisation. The membership is to be ratified with full consensus at the OIC's Council of Foreign Ministers. The same provisions apply for acquiring an observer status.

⊃ All decision-making in the forum requires a quorum defined by the presence of two-thirds of the member states and complete consensus. In case a consensus cannot be reached, decisions shall be made by a two-thirds majority of members present and voting.

⊃ The OIC is financed by the member states proportionate to their national incomes. Should a member fail to meet their obligations such that the

amount of arrears equals or exceeds the amount of contributions due from it for the preceding two years, their voting rights are suspended. The member is only allowed to vote if the Council of Foreign Ministers is satisfied that the failure is due to conditions beyond the member's control.

Decision-making body:

➲ The Islamic Summit, composed of Kings and heads of state, is the supreme authority of the organisation. Convening every three years, it deliberates, takes policy decisions, provides guidance on issues relevant to the organisation and considers issues of concern to the member states.

➲ The Council of Foreign Ministers is the chief decision-making body and meets annually to decide on how to implement the OIC's general policies. They take decisions and resolutions on matters of common interest, review their progress, consider and approve programmes and their budgets, consider specific issues bothering member states and recommend establishing a new organ or committee.

➲ In addition, this council also appoints, for a period of five years, the Secretary General, who is the chief administrative officer of the grouping.

➲ The Secretary General follows up on implementation of the decisions, directs attention to competent organs' specific issues of concern, creates a channel for coordination among the varied organs and submits annual reports on the work undertaken.

➲ The OIC also has standing committees for cooperation on information and cultural affairs, economic and commercial matters, scientific and technological initiatives and for Jerusalem.

INDIA'S HIGH ECONOMIC STAKES HIGH IN WEST ASIA

Why in news?

➲ The diplomatic fallout from the provocative and communally charged comments made by two erstwhile spokespersons of the ruling party in India forced the government into firefighting mode after several West Asian nations including Qatar, Kuwait, Iran, Bahrain, Oman, Iraq, Saudi Arabia and the UAE as well as the 57-nation Organisation of Islamic Cooperation (OIC) and the six-member Gulf Cooperation Council (GCC) took strong exception to the remarks denigrating Islam and the Prophet Muhammed.

➲ In response, Indian officials strenuously asserted that the government stood by the country's traditional values and respected all religions.

➲ It also tasked its diplomats to reach out to individual OIC member states and reassure them on India's position of an 'inclusive' approach to all communities.

INDIA AND WEST ASIA

What prompted the government response?

➲ India's cultural, economic and trade ties with the countries of the West Asian region are deep and abiding.

Historical ties:

➲ Starting with maritime trade, the exchange of goods, services and cultures between the people of the Gulf region including those on the western shores of the Arabian Sea and the people of India's southern and western States reaches back several millennia and significantly predates even the foundation of the Islamic faith.

➲ The West Asian region also served as a land trade bridge to Greece, Rome and other early European empires and a flourishing trade in spices, cloth, silk and indigo in exchange for gold and silver is well recorded.

➲ In a more contemporary historical context, the British colonial era saw the advent of even a loose common monetary system with the rupee serving as legal tender in several Gulf states till the middle of the 20th century. It was also the discovery and subsequent commercial exploitation of oil in the Gulf region during the colonial era that started to alter the balance of trade flows between India and the countries in the region.

Current situation:

➲ Today, the countries of the West Asian region collectively account for well over a sixth of India's total bilateral merchandise trade and contribute about three fifths of India's crude oil supplies. The region is also a major provider of jobs and economic opportunities to Indian workers, professionals and entrepreneurs and houses about 89 lakh Indians.

➲ These non-resident Indians (NRIs) annually send home about $40 billion, and account for more than 55% of the country's total remittance inflows.

➲ Investments from sovereign wealth funds and other large investors from the GCC have also climbed steadily in recent years.

➲ It is the sizeable and rapidly growing economic interconnectedness that the government is keen to insulate from any fallout over this sensitive and potentially disruptive issue.

Why is India so dependent on West Asian countries for its energy needs?

➲ Domestic crude production, which has been declining over the years, meets less than a fifth of the country's oil requirement, forcing India to take recourse to imports to fill the gap of more than 80%.

➲ Out of India's total imports of crude oil, the share of the Gulf countries has remained fairly steady at about 60% over the last 15 years.

➲ In 2020-21, the top oil exporter to India was Iraq, with a share of more than 22%, followed by Saudi Arabia, about 18%. The UAE, Kuwait and Oman were other Gulf countries among the top-10 suppliers of crude oil to India in the fiscal year ended March 2021.

➲ A large proportion of India's refineries have also historically been predominantly configured to process the sulphur-heavy sour grades of crude that are produced in the Gulf region and with the sweeter (low sulphur) grades of oil such as Brent proving comparatively costlier, India's crude purchases have over the last two decades gradually shifted to being more weighted towards the Oman and Dubai sour grades.

➲ While the ratio of sour grades to sweet grades was 57:43 in the fiscal year ended March 2001, the proportion of sour crude to Brent had increased to 75.62:24.38 in the 12 months ended March 2022.

How reliant is India on the region for non-oil trade?

➲ Over the five years from 2017 through 2021, Iran and the GCC member states comprising the UAE, Saudi Arabia, Bahrain, Oman, Kuwait and Qatar accounted for a 15.3% share of India's cumulative two-way merchandise trade of $3.98 trillion in that period.

➲ Of the $609 billion of exports and imports that the seven countries accounted for in this period, the UAE contributed the lion's share of $277.4 billion, or almost 7%, making it one of India's largest trading partners. Saudi Arabia was next with $153 billion.

Comprehensive Economic Partnership Agreement (CEPA):

➲ The region is today a key market for several Indian commodities ranging from tea and basmati rice to electrical equipment, apparel, and machinery.

➲ Reflecting this importance, India and the UAE signed the CEPA in February with the aim of increasing the total value of bilateral trade in goods to more than $100 billion in five years and getting services trade to exceed $15 billion over the same period.

➲ The trade pact will provide Indian exporters preferential market access on '99% of the country's exports to the UAE in value terms, particularly from labour-intensive sectors such as gems and jewellery, textiles, leather, footwear, sports goods, plastics, furniture, agricultural and wood products, engineering products, pharmaceuticals, medical

devices, and automobiles', according to a Ministry of Commerce and Industry release.

➲ With the CEPA now serving as a framework, the government is actively pursuing a broader FTA (Free Trade Agreement) with the GCC as a whole. With the region serving as a key hub to markets in Africa, India is keen to gain tariff-free access for its exports not just to the Gulf region but also to countries across Africa.

What else is at stake?

➲ The West Asian region provides among the largest number of overseas jobs for Indians, with nearly 89 lakh Indians living and working in the Gulf economies.

➲ The UAE, which comprises the seven emirates of Dubai, Abu Dhabi, Sharjah Ajman, Umm Al-Quwain, Fujairah and Ras Al Khaimah, accounts for the largest share of NRIs in the region and is home to more than 34 lakh Indians. Saudi Arabia with close to 26 lakh and Kuwait with over 10 lakh are the other large providers of jobs and economic opportunities for Indians.

➲ Indians are today ubiquitous by their presence across a vast range of job categories in the region spanning construction labour to oil industry workers, nurses and doctors in the medical sector to the hospitality industry and finance professionals.

➲ The remittances that they sent back home in 2017 accounted for about 55% of the total $68.97 billion in inward remittances received in India from across the world that year.

THE FATF AND PAKISTAN'S POSITION ON ITS 'GREY LIST'

Why in news?

➲ Ahead of the plenary session of the Financial Action Task Force (FATF), in June, Pakistan is expecting its removal from the FATF's 'grey list' or the list of countries presenting a risk to the global financial system.

➲ In its last plenary meeting in March, the FATF had retained Pakistan's listing, asking it to expeditiously address the remaining deficiencies in its financial system.

What is the FATF?

➲ The Financial Action Task Force is an international watchdog for financial crimes such as money laundering and terror financing.

➲ It was established at the G7 Summit of 1989 in Paris to address loopholes in the global financial system after member countries raised concerns about growing money laundering activities.

➲ In the aftermath of the 9/11 terror attack on the U.S., FATF also added terror financing as a main focus area. This was later broadened to include restricting the funding of weapons of mass destruction.

- The FATF currently has 39 members. The decision-making body of the FATF, known as its plenary, meets thrice a year. Its meetings are attended by 206 countries of the global network, including members, and observer organisations, such as the World Bank, some offices of the United Nations, and regional development banks.

Functions:

- The FATF sets standards or recommendations for countries to achieve in order to plug the holes in their financial systems and make them less vulnerable to illegal financial activities.
- It conducts regular peer-reviewed evaluations called Mutual Evaluations (ME) of countries to check their performance on standards prescribed by it. The reviews are carried out by FATF and FATF-Style Regional Bodies (FSRBs), which then release Mutual Evaluation Reports (MERs).
- For the countries that don't perform well on certain standards, time-bound action plans are drawn up. Recommendations for countries range from assessing risks of crimes to setting up legislative, investigative and judicial mechanisms to pursue cases of money laundering and terror funding.

What are FATF's 'grey' and 'black' lists?

- While the words 'grey' and 'black' list do not exist in the official FATF lexicon, they designate countries that need to work on complying with FATF directives and those who are non-compliant, respectively.
- At the end of every plenary meeting, FATF comes out with two lists of countries. The grey countries are designated as "jurisdictions under increased monitoring", working with the FATF to counter criminal financial activities. For such countries, the watchdog does not tell other members to carry out due-diligence measures vis-a-vis the listed country but does tell them to consider the risks such countries possess. Currently, 23 countries including Pakistan are on the grey list.
- As for the black list, it means countries designated as 'high-risk jurisdictions subject to call for action'. In this case, the countries have considerable deficiencies in their AML/CFT (anti-money laundering and counter

terrorist financing) regimens and the body calls on members and non-members to apply enhanced due diligence.

- In the most serious cases, members are told to apply counter-measures such as sanctions on the listed countries. Currently, North Korea and Iran are on the black list.
- Being listed under the FATF's lists makes it hard for countries to get aid from organisations like the International Monetary Fund (IMF), Asian Development Bank (ADB), and the European Union. It may also affect capital inflows, foreign direct investments, and portfolio flows.

Why is Pakistan on the grey list?

- Pakistan was retained on the grey list in March as it was yet to address concerns on the front of terror financing investigations and prosecutions targeting senior leaders and commanders of UN designated terrorist groups.
- In Pakistan, steps had been taken in this direction such as the sentencing of terror outfit chief Hafiz Saeed, prosecution of Masood Azhar, arrest of about 300 other designated terrorists, and the seizure of more than 1,100 properties owned by terror groups. India meanwhile, a member of FATF, suspects the efficacy and permanence of Pakistani actions.
- Pakistan is currently banking on its potential exclusion from the grey list to help improve the status of tough negotiations with the International Monetary Fund to get bailout money.
- Pakistan has found itself on the grey list frequently since 2008, for weaknesses in fighting terror financing and money laundering. In 2009, the country began to cooperate with the FATF-like regional body, Asia Pacific Group (APG), for a ME process.

GENDER BUDGETING IN INDIA & LESSONS FROM NAMIBIA

Context:

- Namibia, a Sub-Saharan country ranked sixth in the World Economic Forum's Global Gender Index 2021 report, followed by Rwanda, making them the only two African countries to have made to the list of top 10 countries.
- Although India ranks 131 in HDI (Human Development Index) and Namibia at 130, Namibia has 91.7 percent of legal frameworks that promote, enforce, and monitor gender equality under the SDG indicator as compared to 83.3 percent in India.

National Gender Policy (NGP) in Namibia:

- Post-Independence from South Africa in 1990, the Government of Namibia, in1997, adopted the National Gender Policy (NGP) and National Plan of Action (NPAC), in order to address inequalities in men and women which was approved in 1998.

- The Namibian government has come a long way and has created gender cells in every Office/Ministry/Agency since it launched the National Gender Policy (2010-2020) and National Plan of Action (NPAC) policy.
- In 2014-15, there was a significant increase in the number of women in the Parliament—it increased from 25 percent to 47 percent.
- Additionally, politicians were trained in gender sensitivity; parliamentary debates from a gender perspective increased; and the Namibian government granted NAD$5.4 billion to Gender Responsive Budgeting (equivalent to 9.2 percent of the total budget) for its annual budget in 2022.

Gender Responsive Budgeting (GRB) Guidelines:

- In 2015, the Ministry of Gender Equality and Child Welfare (MGECW) of Namibia came out with a set of Gender Responsive Budgeting (GRB) Guidelines.

Approaches to Gender Responsive Budgeting in Namibia

There are two key GRB approaches followed in Namibia: The three-category expenditure approach:

a) Gender-specific expenditures: Allocations to programmes that specifically target groups of women, men, girls, and boys. These include expenditure on maternal health, girls' education, micro-credit, and income generation activities for women.

b) Expenditures that promote gender equity in public service: This comprises allocations to equal employment opportunities in government departments and authorities.

c) General or mainstream expenditure: The focus of this category is on the differential impact on women, men, girls, and boys. It covers all expenditures, which the above two categories do not include. It consists of expenditures on education, health, infrastructure, mining, security, and defence.

The five-step approach to gender-responsive budgeting

- A situation analysis of women and men, girls and boys
- Gender analyses of policy framework
- Gender analysis of the budget
- Monitoring budget implementation
- Assessing the gender impact of policy and associated budget

Gender-responsive budgeting in India:

- Gender-responsive budgeting was first introduced in 2001 in India.
- In 2003, the Government of India suggested that all ministries and departments include a section on gender issues in their respective annual reports. In 2004, an expert group was set to classify government transactions and "to examine the feasibility of and suggest the general approach to gender budgeting".

- By 1 January 2005, all departments and ministries were instructed to form gender budgeting cells as per the Department of Economic Affairs, Ministry of Finance guidelines.

The gender budget statement in India in 2005 comprises two parts:

- Part A of the budget comprises women-specific schemes, which provide 100 percent allocation for women (schemes such as Poshan 2.0).
- Part B of the budget comprises pro-women schemes which provide at least 30 percent to 99 percent of the allocation for women (such as SamagraShiksha).

Gender budgeting scheme:

- A gender budgeting scheme was launched to facilitate capacity building and support research, to encourage planning, formulation of budgets and implementation procedures with a gender lens, allowing state governments and government agencies to use this scheme.
- Later in 2013, a set of guidelines highlighting a road map towards institutionalising gender budgeting was issued to all states.
- Until 2015–16, 56 ministries and departments have set up gender budgeting cells but India's gender budget has been below 5 percent for the last five years.

Budget 2022:

- The much-awaited gender budget, in 2022, too declined marginally this year from 4.4 percent in 2021 to 4.3 percent of the total union budget. Though the budget has increased in absolute numbers, it has decreased as the total of the union budget.
- In 2021, the amount for gender budget allocated was US$ 19.7 billion, this has seen an increase of 11 percent to US$ 22.05 billion. Furthermore, Part A of the scheme which focuses on women-specific schemes has been allotted US$ 3.45 billion, leading to an increase of 6 percent, as compared to the last year's US$ 3.25 billion.
- Part B of the scheme, which consists of pro-women schemes, which have a primary focus on women, has been allocated 84 percent of the total gender budget at US$ 18.6 billion, this section of the budget has seen an increase of 12 percent from US$ 16.6 billion. In 2020, the pre-pandemic gender budget was 4.72 percent of the union budget.
- The pandemic has brought out greater fault lines in the society, clarifying that even though women account for 48 percent of the population in the country, they continue to bear the brunt of the pandemic. However, areas such as digital literacy, skill training, and domestic violence against women, only received 2 percent of the budget.

Way Forward:

- Gender inequality continues to be a major roadblock to India's development. It needs to follow a nuanced

approach that addresses the needs and challenges of vulnerable groups at present and in future by mainstreaming GRB and drawing lessons from Namibia's policy initiatives.

- Measures can be taken by the MWCD to devise a framework that ensures planning, coordinating, monitoring and evaluating the progress of initiatives and assessing whether the objectives are being met or not.

- Administrations across the country must train personnel on gender sensitivity, resources that facilitate income generation, and allocation of funds. Participation and coordination amongst ministries at all levels must be initiated to attain inclusive and sustainable development.

TURKEY & GREECE AT ODDS OVER ISLANDS IN THE AEGEAN SEA

Why in news?

- Recently, Turkey has warned Greece to demilitarize the Aegean islands. The Aegean dispute once again resurfaces between the two historic regional rivals.

- Turkey alleges that Greece has been building a military presence in violation of international treaties that guarantee the unarmed status of the Aegean islands.

- Meanwhile, Greece maintains that Turkey has deliberately misinterpreted the treaties, adding that it has legal grounds to defend itself.

Why is the Aegean Sea at the centre of Greco-Turkish ties?

Location of Aegean Sea:

- The Aegean Sea, spanning over two lakh square kilometres, is an arm of the Mediterranean Sea.

- It is located in the East Mediterranean Basin with the Greek peninsula to its west and Anatolia (consisting of the Asian side of Turkey) to its east.

- There are more than a thousand islands in the Aegean Sea, almost all Greek, and some within two kilometres of mainland Turkey or the Turkish west coast.

Dispute:

- Greece and Turkey have been regional adversaries on a host of issues concerning the Aegean sea since the 1970s, both asserting rival claims over their borders in the Sea. They came to the brink of war in 1996 over a pair of uninhabited islets in the Aegean Sea, referred to as the Imia islets in Greece and as Kardak in Turkey.

- A Turkish cargo ship had run aground in Imia in December 1995 and both countries rushed to salvage it. Turkey rejected Greece's help and its sovereignty over Imia. Shortly after, both countries moved their navies towards Imia, resulting in a standoff that spilled over into January of 1996. The issue attracted international concern as both countries began to mobilise their forces for war, however, global intervention prevented further escalation.

- Over the decades, attempts at resolving disagreements over the Aegean Sea have seen the involvement of multiple actors like the United Nations, the United States, European countries, the International Court of Justice, and NATO.

What do international treaties say about Aegean islands?

Lausanne Convention of 1923:

- The Lausanne Treaty of 1923was signed at the end of the First World War to settle the conflict between Turkey (the successor of the Ottoman Empire) and the Allied Powers including Greece. The Treaty defined the boundaries of Turkey and Greece, and several islands, islets and other major territories in the Aegean Sea beyond three miles from the Turkish coast were ceded to Greece, with the exception of three groups of islands.

- Under the terms of the Treaty and the Lausanne Convention of 1923, Greece was obligated to keep the islands demilitarised. The Treaty also opened up civilian shipping passage in the Turkish Straits and mandated Turkey to demilitarise the straits. Turkey also ceded Cyprus to the British.

Paris Peace Treaties of 1947:

- At the end of the Second World War, as part of the Paris Peace Treaties of 1947, the Dodecanese Islands (a group of 12 islands in the Aegean Sea) were given to Greece, again with the obligation of permanent and total demilitarisation. They had been ceded to Italy in 1923.

- While Turkey recognises both these treaties, Greece accuses it of wrongly interpreting them, and argues that the 1936 Montreux Convention Regarding the Regime of the Straits superseded the Lausanne Treaty on the Straits, as it gave Turkey the power to militarise the Turkish Straits, hence nullifying the obligation upon Greece to demilitarise the Aegean Islands.

What are the issues that have caused friction over the Aegean Sea?

➲ Turkey and Greece have long sparred over the extent of their respective territorial waters in the Aegean, the determination of continental shelves, airspace, Exclusive Economic Zones (EEZs), militarisation, and sovereignty of certain islets.
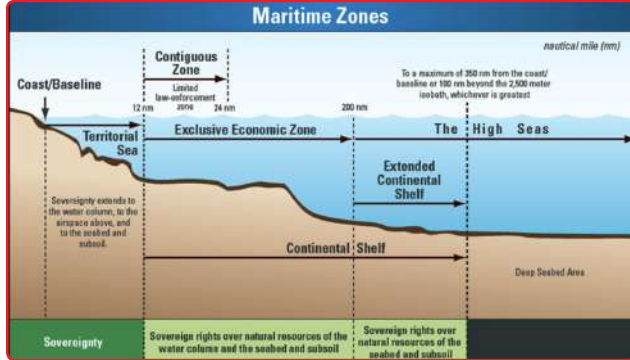
Territorial seas:

UNCLOS:

➲ In 1995, Greece ratified the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which provides a legal framework to recognise the limits of maritime zones of coastal nations. While over 160 countries are party to the Treaty, Turkey did not sign it as it did not favour its interest in the Aegean Sea.

➲ According to the UNCLOS, the sovereignty of a coastal country extends "beyond its land territory and internal waters" to an "adjacent belt of sea, described as the territorial sea".

➲ A country's territorial sea extends to 12 nautical miles (nm) from the baseline of its coast, and it has sovereign rights over it. (One nautical mile is equal to 1.1508 land-measured miles or 1.852 kms.)

Claim by Turkey:

➲ Presently, Turkey claims a territorial sea of six nautical miles and has not exercised its claim over the 12 nautical miles from its coast in the Aegean Sea. After the Greek Parliament adopted the UNCLOS in 1995, Turkey retaliated by authorising its government to take necessary steps including military action, if Greece extended its rights to 12 nm.

➲ In 1974, in a separate Aegean Sea-linked issue, Turkey had formally said that if Greece fully extended its territorial waters, it would count as a casus belli (cause of war).

➲ Turkey argues that if Greece extends its territorial waters it would have control over two-thirds of the Aegean Sea, depriving Turkey of its basic access to international waters and trade routes.

Continental shelves and Exclusive Economic Zones:

➲ In geological terms, the continental shelf is defined as the seabed and subsoil that is the prolongation of a country's landmass, extending beyond its territorial sea. The Exclusive Economic Zone (EEZ) is a zone in which a country has special rights to exploration, use of natural resources, wind and hydro-power generation, and other economic activities like laying of pipelines, fishing and so on.

➲ As per the UNCLOS, the continental shelf extends to 200 nautical miles from the country's coastal baseline but is within its continental margin. A country has sovereign rights over the natural resources in the water and the seabed and soil within its continental shelf. EEZs also extend to 200 nm from the coastline.

Claim of Greece:

➲ Greece argues, citing UNCLOS provisions, that every Greek island in the Aegean generates its own continental shelf, which would mean that the Greek Continental Shelves extend to Eastern Greek islands near the Turkish Coast. Meanwhile, Ankara contends that the continental shelf border in the Aegean is the median line between the coasts of the two countries and should be determined on an equitable basis.

➲ Since the 70s, Turkey and Greece have had disagreements over their overlapping continental shelves and over offshore natural resources like gas and minerals held by these shelves.

➲ In 2020, tensions flared between the two countries when Turkey sent its seismic research vessel Oruc Reis to map potential drilling opportunities for oil and natural gas near the Greek island of Kastellorizo. A Turkish naval ship collided with a Greek naval ship while both were shadowing the Oruc Reis. The research vessel later returned to Turkish shores.

➲ Turkey maintains that it will undertake exploratory work in the areas it lays claims to as there is no bilateral agreement between the two countries delimiting their continental shelves. Ankara and Athens have also signed deals in the last couple of years creating conflicting EEZs with countries like Libya and Egypt respectively.

Militarisation:

➲ Right now, Turkey has cited the Lausanne and Paris treaties, arguing that Greece is violating them by increasing its military presence in the Aegean Islands.

➲ Meanwhile, Greece argues that some of the islands, which have been garrisoned for decades, have troops because they're in close proximity to the Izmir coast, where Turkey has deployed a large landing force called the Fourth Army, which in theory, makes it capable of seizing Greek Islands. Athens argues that it has a military presence in such islands for the purposes of self-defence.

➲ After Turkey's invasion of Cyprus in the 1970s, Greece militarised the Dodecanese Islands near Turkey for defensive purposes.

- Presently, for instance, the Greek islands of Rhodes, Kos, and Lesbos in the Aegean Sea near the Turkish coast would meet the description of militarised, according to the Associated Press.

Airspace violations:

- UNCLOS states that a country has sovereign rights over the airspace above its territorial sea. Currently, Greece claims six nm of territorial sea in the Aegean, starting from its coast. Hence, its internationally recognised airspace over the Aegean is also up to six nm.
- Alleged violation of airspace over the Aegean Sea has also been a bone of contention between the two countries.
- Both Greece and Turkey have alleged that the other is carrying out flights near or over their coasts.

What's next?

- As mentioned earlier, Greece has taken the matter to the NATO, while Turkey has said that Greece is the one instigating tensions by flying near its coastline.

THE CONTROVERSY AROUND THE NORTHERN IRELAND PROTOCOL

Why in news?

- Recently, the UK. Administration has come up with a new legislation, the Northern Ireland Protocol Bill, which would enable the U.K. to override provisions of the Brexit deal that concern trading arrangements in Northern Ireland, the Northern Ireland Protocol (NIP).
- The European Union (EU) has said that the proposed law violates international law and has threatened to take legal action against the U.K. if it goes ahead with the legislation.

What is Northern Ireland Protocol (NIP)

- Northern Ireland is the only part of the U.K. that shares a land border with the EU, as the Republic of Ireland (or Ireland) is an EU member-state. As long as the U.K. was part of the EU, things were fine. But with Brexit, the U.K. exited the EU's customs union.
- This created a problem whose solution needed two seemingly contradictory outcomes: preserving the sanctity of the EU's single market, as well as that of the U.K.'s domestic market.
- The NIP's solution was to avoid a customs check at the actual customs border, on the island of Ireland, between Northern Ireland and the Republic of Ireland as this would have violated the 1998 Good Friday Agreement and risked instability in a region with a volatile past.
- It instead shifted the customs border to that between Northern Ireland and Britain, effectively at the former's ports.
- As per the NIP, goods flowing into Northern Ireland would be checked at this 'sea border' before entering the island, and Northern Ireland would continue to follow EU rules in product standards.

Why did the U.K. come up with the Northern Ireland Protocol Bill?

- The Northern Ireland Protocol (NIP) has been a lingering issue for the U.K. almost from the day Brexit was signed. In fact, back in July 2021, the Boris Johnson administration announced its intent to renegotiate the NIP. But with efforts at negotiations not producing the results it wanted, it decided to proceed with a unilateral revamp of the NIP via domestic legislation.
- The main irritant for the U.K. in the current version of the NIP was the creation of "unacceptable barriers" to trade within the U.K. internal market between Great Britain and Northern Ireland. It has sparked complaints from businesses about the enormous paperwork needed for supply of goods and services to Northern Ireland despite it being within the sovereign territory of the U.K.
- Also, the Unionists of Northern Ireland (the section loyal to the U.K.) are unhappy with the NIP, and resent having to put up with a provision that effectively puts them at one remove from the U.K., when compared with citizens in other parts of the U.K. Northern Ireland's main unionist party is, in fact, blocking the formation of a new power-sharing government in Belfast, saying it won't take part until the NIP rules are scrapped.
- It is in this context that the Northern Ireland Protocol Bill seeks to empower the U.K. government to override key provisions of the NIP.

How does the proposed Bill undermine the NIP?

- Instead of subjecting all goods moving between Britain and Northern Ireland to customs checks, the new Bills proposes two categories of goods and checks: goods meant only for Northern Ireland would go in a 'green lane' and will be exempt from any checks, while goods headed for Ireland and the EU would go into a 'red lane' where they will be subjected to all the checks and customs controls.
- Secondly, the Bill would remove EU oversight on state subsidies and value-added taxes in Northern Ireland.
- Third, the Bill proposes settlement of trade disputes and the enforcement of the NIP by an independent body rather than the European Court of Justice.
- Lastly, the Bill wants to give businesses the choice of selling their goods in Northern Ireland either according to the U.K. rules or the EU rules, in effect, proposing a dual regulatory regime instead of the single (EU) one as per the NIP.

What has been the reaction to the proposed Bill?

- The Bill has triggered strong pushback from MPs belonging to Mr. Johnson's own party, from Irish legislators, and from EU officials.
- All of them have pointed out that the legislation would violate international law, damage the U.K.'s

reputation as a trade partner, and spark a trade war with the EU.

➲ The EU's executive branch announced on June 15 that it would be taking legal action against the U.K. for violating international law.

How has the Johnson administration justified the Bill?

➲ The U.K. administration has sought to justify its breach of its obligations under the Brexit agreement by invoking a principle of international law known as the "doctrine of necessity".

➲ The UN's International Law Commission allows a state to invoke this doctrine when its "essential interests" are facing a "grave and imminent peril". The Johnson administration believes that this emergency loophole will enable it to defeat any legal challenge to its proposed Bill.

➲ The "grave peril" in this context, according to the British government, is the threat posed by the NIP to the Good Friday Agreement.

ENVIRONMENTAL FALLOUT OF THE UKRAINE WAR

Context:

➲ On 24 February, Russian President Vladimir Putin launched an all-out invasion of Ukraine. Since the end of World War II in 1945, this is the first time one nation has tried to redraw borders in Europe.

➲ Russian preparation for the invasion coincided with the wrapping up of the 2021 United Nations Climate Change Conference (COP 26) in November 2021. And this time, COP26 came out with environmentally significant commitments.

Commitments at COP 26:

➲ Nations affirmed the Paris agreement targets of limiting the rise of global temperature to not more than 2 degrees C from the pre-industrial period.

➲ As many as 137 nations committed to taking steps to reverse forest land degradation by 2030, and 103 nations pledged to reduce methane emissions by 30 per cent of 2020 emission levels by 2030.

➲ One of the major hindrances in achieving these lofty environmental targets is the world's dependence on hydrocarbons.

Environmental aspect:

➲ The war has been going on for more than three months. It has changed geopolitics and alliances across the globe. Environment and climate change policies are also impacted by it significantly.

➲ The fifth session of the United Nations Environment Assembly (UNEA 5.2) got underway in the Kenyan capital, Nairobi, with discussions on global environmental concerns.

➲ One of the key points discussed was the reason why the biodiversity and wildlife of Ukraine must bear the brunt of this war.

➲ Russia remained oblivious to these concerns. Amidst an ongoing war, environmental protection is not a major issue for Russia.

Russia as energy supplier:

➲ Russia is an energy giant with $167 billion worth of energy exports in 2020. Energy exports contribute to about 67 per cent of the Russian economy. In 2020, the carbon footprint of Russia amounted to 1.48 billion metric tons of CO_2.

➲ With sanctions restricting Russian gas supplies to the west, the EU needs to hastily look for alternative solutions. Germany imports 40 per cent of its gas and 25 per cent of its oil from Russia.

Gas imports by Germany & Italy:

➲ Germany, mentioned during the early days of the war that it would stop its Russian oil imports by the end of 2022, followed by its gas supplies.

➲ Ukraine's president is urging all EU states to stop energy trading with Russia as this 'blood money' is feeding the Russian war machine. The sale of Russian oil and gas accounts for $1 billion per day.

➲ Economists have warned Berlin that immediate stoppage of oil and gas supplies from Russia could initiate an economic recession in the country.

➲ Italy is the next largest buyer of Russian hydrocarbons. Both nations are looking at alternative energy sources to limit their dependency on Russian energy imports.

➲ As of now, Russian gas reaches the EU through Ukraine: The Yamal-Europe pipeline crosses Belarus and Poland to Germany, and the Nord Stream pipeline passes below the Baltics.

➲ Germany can import from the UK, Norway and Netherlands to augment its energy demands, while eastern and southern European nations can import Azerbaijani gas via the Trans Adriatic Pipeline and the Trans-Anatolian Natural Gas Pipeline (TANAP) through Turkey.

EU Solar Strategy'

➲ The 'EU solar strategy' can double energy generation through photovoltaic cells.

➲ The same strategy would bring another 600GW of new solar infrastructure by 2030.

➲ Member nations would have to identify geographical locations to install renewable energy infrastructure with the least environmental impacts.

➲ The plan targets 10 million tonnes of domestic renewable hydrogen production and 10 million tonnes of imports by 2030 to phase out natural gas.

➲ To improve hydrogen-linked technologies, 200 million will be set aside to fund research.

Supply by US:

➲ The US has also committed to delivering 5 billion cubic metres of liquefied natural gas (LNG) through North-Atlantic routes.

- The Trans- European Energy Networks (TEN-E) is working to build new pipelines to bring gas from other nations.
- If energy solutions are not there will be pressure on the Dutch government to allow more extraction from the vast Groningen gas field, which is already prone to land subsidence.
- According to reports, 85 per cent of EU citizens favour moves to reduce dependence on Russian gas.
- But replacing Russian gas with other supplies is not a sustainable solution. European Green Deal legislation focuses on consumer behavioural changes to reduce energy loss.
- This would cut the energy demands by 5 per cent. It would also speed up renewable energy development in the EU.

Way Forward:

- To unshackle the Russian energy chains, Europe must develop green alternatives. The war highlights the need for sustainable energy infrastructure, to safeguard the global economy from energy giants such as Russia.
- The EU is taking positive steps to build its renewable infrastructure which can be a positive model for other nations to follow. This would make our world a peaceful place and build a green, sustainable, zero-emission future.

ASEAN-INDIA FOREIGN MINISTERS' MEETING (SAIFMM)

Why in news?

- Recently, India hosted ASEAN Foreign Ministers and Secretary General for a Special ASEAN-India Foreign Ministers' Meeting (SAIFMM) to commemorate 30 years of ASEAN-India Dialogue Relations.

Special ASEAN-India Foreign Ministers' Meeting
16th JUNE 2022, NEW DELHI

Background:

- The senior officials of ASEAN, which is a regular platform for engagement, had last interacted virtually in May 2022.
- During the virtual meeting in May, India had talked about the "convergence between the ASEAN Outlook for the Indo-Pacific (AOIP), India's Indo-Pacific Oceans' Initiative (IPOI) and Indo-Pacific policies announced by several ARF countries."
- The focus for all the meetings had been on security, post-pandemic recovery, development of resilient supply chains, cybersecurity and open transparent rules-based maritime zones.

US & ASEAN:

- The ASEAN leaders held a special summit with US President Joe Biden in Washington DC in April. The summit was high on political and regional posturing but lacked economic push.
- The US-ASEAN relationship is likely to be elevated to the "comprehensive economic partnership" status towards the end of 2022. However, this would not guarantee a wholehearted support from all of ASEAN for a US-led Indo-Pacific order.
- Most of the nations in the southeast Asian neighbourhood, which constitutes ASEAN, are striving for greater economic engagement with rich nations.
- The US has investments worth $330 billion in ASEAN nations. However, the US has taken a back seat in furthering its economic engagements and trade relations with ASEAN.

RCEP:

- This has led to an aggressive China-led Regional Comprehensive Economic Partnership (RCEP) dictating most of the economic agenda.
- Notably India is not part of RCEP, which is the largest free trade agreement in force.
- The ASEAN countries have been using the RCEP+ model to negotiate favourable agreements with large trading partners such as EU and Canada.
- The ASEAN members' agility in negotiating trade and economic relations has also seen many of the member countries joining the recently announced Indo-Pacific Economic Framework in Tokyo.

India's FTA with ASEAN:

- India has had a free trade agreement in place with ASEAN members since 2010; however, it has always seen a trade imbalance, with imports exceeding exports by huge margins.

Challenges:

- The rising challenges of non-tariff barriers, import restrictions, export taxes by ASEAN countries, together with backdoor entry of China (read China-made goods) through ASEAN countries is a major cause of concern for India.
- There have been ongoing talks for setting up a review panel on the India-ASEAN FTA for a more equitable growth for the partners.

Opportunities:

- India has been looking at expanding the ASEAN FTA to include several novel aspects of such as services, digital economy, electronics, supply chains, fisheries, etc. The goal is to take the economic relationship from nearly $80 billion to $200 billion.
- It might be a difficult FTA review for India to pull out, given it is entering in parallel negotiations with

bodies such as the EU and UK. The EU and UK trade agreements could include negotiations on some of the novel aspects including those related to the digital trade on which India has apprehensions.

⮑ These upcoming negotiations could have dedicated work groups on cross-border data flows, data privacy related topics, on some of which India has chosen to tread a path different from that of the Western world.

Way Forward:

⮑ India's position on these new-age trade issues with the developed world could shape its negotiations with existing partners such as ASEAN.

'GENEVA PACKAGE' AT 12TH WTO MINISTERIAL CONFERENCE

Why in news?

⮑ Recently, the WTO's 12th Ministerial Conference (MC12) concluded at WTO headquarters in Geneva.

⮑ The 12th WTO Ministerial Conference held after more than four years produced the 'Geneva Package'.

⮑ Last time at Bali in Indonesia, WTO Ministers adopted a comprehensive package, which finally resulted in Trade facilitation agreement getting annexed to the WTO legal text.

'Geneva Package':

⮑ The WTO finalised a proposal to not restrict supplies of food grains to the United Nations World Food Programme (WFP). However, these supplies would be subjected to the domestic requirements.

⮑ It includes agreements on curbing harmful fishing subsidies and temporary patent waiver for production of COVID-19 vaccines.

⮑ It was also agreed to find a final solution to the issue of continuation of moratorium on imposing customs duties on electronic transmission of goods by the next ministerial conference of the WTO or not later than March 2024.

⮑ The package adopted by members included a ministerial declaration on the emergency response to food insecurity; a ministerial decision on World Food Programme (WFP) food purchases exemptions from export prohibitions or restrictions; a declaration on the WTO response to the COVID-19 pandemic and preparedness for future pandemics; and a decision on the agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS).

⮑ Besides, the ministers adopted two decisions: on the work programme on small economies and on the TRIPS non-violation and situation complaints.

What it translates for India?

⮑ From India's point of view, the outcomes on fisheries subsidies, public stockholding for food security, TRIPs waiver for COVID vaccine manufacturing and Ministerial decision to reinvigorate the work under the Work Programme on Electronic Commerce, are historical.

⮑ India, through its very consistent and principled stand, ensured that the rights of fishermen, farmers, poor and marginalised, MSMEs in trade and business, are protected.

IUU (Illegal, Unreported and Unregulated) fishing:

⮑ India has been successful in introducing checks on illegal fishing, under-reporting or outside regulation — IUU (Illegal, Unreported and Unregulated) fishing.

⮑ Fisheries subsidies agreement is the second multilateral pact of the WTO finalised after a gap of nine years. It aims at boosting and promoting sustainable fishing.

⮑ There would be very strict controls on overfished areas so that fish stocks are restored. Additionally, no subsidies can be provided for fishing in areas outside EEZ (Exclusive Economic Zones) or RFMOs (Regional Fisheries Management Organisations).

⮑ It was in 2013 at the Bali ministerial conference of the WTO, the member countries inked the trade facilitation agreement to promote seamless movement of goods across the global borders.

Temporary patent waiver for manufacturing COVID-19 vaccines:

⮑ The members also agreed to grant a temporary patent waiver for manufacturing COVID-19 vaccines for a period of five years.

⮑ Under this, a country would be able to issue a compulsory licence to its domestic pharma firms to make that vaccine without taking approval from the original maker. Besides, it was also decided to permit export of those vaccines.

⮑ However, talks on including therapeutics and diagnostics, as proposed by India and South Africa, under the purview of this waiver would start after six months.

⮑ The TRIPS decision will boost export, vaccine equity, accessibility and affordability.

WTO Reforms:

⮑ On WTO reforms, it was ensured that the core principles like consensus-based decision making

and special and differential treatment for developing and LDCs (Least Developed Countries) are there.

⮕ Under this, the dispute settlement body will be revived and it will play its expected role in settling trade disputes.

⮕ A reference to gender, environment and MSME has been made in the WTO reform agenda.

E-commerce:

⮕ On e-commerce, while agreeing to the temporary moratorium, India asked for intensifying discussions on the moratorium including on its scope, definition and impact for taking an informed decision on the same.

Way Forward:

⮕ The "Geneva Package" confirms the historical importance of the multilateral trading system and underlines the important role of the WTO in addressing the world's most pressing issues, especially at a time when global solutions are critical.

WEST SETI POWER PROJECT & INDIA-NEPAL TIES

Why in news?

⮕ India will be taking over an ambitious hydropower project in Nepal, West Seti nearly four years after China withdrew from it, ending a six-year engagement between 2012 and 2018.

Background:

⮕ India's National Hydro Power Corporation (NHPC) has already begun preliminary engagement of the site in far-western Nepal following Indian Prime Minister's visit to Lumbini in May.

⮕ The current government in Nepal declared that since India was Nepal's power market and it had a policy of not buying power from China-executed projects, West Seti would be given to India.

Refusal by China & Australia:

⮕ The CWE Investment Corporation, a subsidiary of China Three Gorges Corporation, had informed the Nepal Government in August 2018 that it would not be able to execute the 750-MW West Seti Hydropower Project it had undertaken on the ground that it was "financially unfeasible and its resettlement and rehabilitation costs were too high".

⮕ Prior to that, the Snowy Mountain Engineering Corporation (SMEC) had been refused renewal of its licence following its failure to begin the work "convincingly" during an entire decade from the mid-1990s.

⮕ The Australian company had been given a generation licence for 30 years under a Build, Own, Operate and Transfer (BOOT) scheme.

India a feasible market for Nepal:

⮕ Nepal is rich in power sources with around 6,000 rivers and an estimated potential for 83,000 MW.

⮕ India has formally approached Nepal on many occasions, seeking preferential rights over Nepali waters should it match offers coming from elsewhere.

⮕ India is viewed as a feasible market for Nepal, but there has been some uncertainty in Nepal over India's inability to deliver projects on time. India has undertaken to harness or expressed intent to harness major rivers in the north.

Failures:

⮕ An ambitious Mahakali treaty was signed back in 1996, to produce 6,480 MW, but India has still not been able to come out with the Detailed project Report.

⮕ The Upper Karnali project, for which the multinational GMR signed the contract, has not made any headway for years. Also, one reason SMEC had to wind up was its failure to enter into a power purchase agreement with India.

Achievements:

⮕ What has helped build faith recently is India's success in executing the 900-MW Arun Three project in eastern Nepal's Sankhuwa Sabha.

⮕ It is being executed by India's Sutlej Vidhyut Nigam under a BOOT scheme, and whose foundation was laid in 2018 and which is set for completion by2023.

⮕ During his first visit as PM to Nepal in 2014, Modi had said India must start executing its projects timely.

West Seti Project:

⮕ Sutlej Vidhyut Nigam is being awarded the 695-MW Arun Four project, followed by the decision to award West Seti to NHPC.

⮕ Estimated to cost Nepali Rs 104 billion (Indian Rs 6,500 crore), the project is envisaged to provide Nepal 31.9% electricity free. Besides, locals affected by the project are being given a share of Nepali Rs 10 million plus 30 units of electricity per month free.

➲ Nepal's Constitution has a provision under which any treaty or agreement with another country on natural resources will require Parliament's ratification by at least a two-thirds majority. That will also mean homework will be required before any hydro project is signed and given for execution.

Power shortfall in Nepal:

➲ Nepal has a massive power shortfall as it generates only around 900 MW against an installed capacity of nearly 2,000 MW.

➲ Although it is currently selling 364 MW power to India, it has over the years importing from India.

How West Seti can be a defining model for Nepal India's power relations?

➲ It is still not clear what changes or expansion the NHPC will propose to the project initially planned at 750 MW, but the project will be a storage scheme generating power round the year to be supplied to India, either for domestic consumption or for the trade through its national grid.

➲ And its success is expected to restore India's image in Nepal and give it weightage in future considerations for hydropower projects, when competition is bound to be tough.

➲ West Seti, therefore, has the potential to be a defining model for Nepal India's power relations in future.

INTEGRATE YOGA INTO COMMUNITY BASED WELL-BEING INITIATIVES, SAYS WHO

Why in news?

➲ On the eve of International Day of Yoga (IDY), the WHO said policymakers should consider integrating yoga into community-based mental health and well-being initiatives while increasing efforts to leverage the potential of safe and effective traditional medicine.

Significance of Yoga:

➲ The regular yoga practice can help people of all ages and incomes achieve adequate physical activity, making it a high-impact, cost-effective way to prevent and control non-communicable diseases (NCDs) one of UN South-East Asia Region's eight flagship priorities.

➲ It has been shown to have immediate psychological effects, decreasing anxiety and stress, and increasing feelings of emotional and social well-being.

➲ Throughout the COVID-19 response, yoga has helped hundreds of millions of people from all countries and cultures stay healthy and well.

Initiatives by WHO:

➲ The region continues to intensify action to increase physical activity and enhance mental health, in line with its flagship priorities - the WHO Global Action Plan on Physical Activity (GAPPA) 2018-2030, Comprehensive Mental Health Action Plan 2013-2030, and the Sustainable Development Goals.

➲ In 2021, the WHO launched a Regional Roadmap on implementing the GAPPA, which will help member states identify and implement policies to achieve a 15 per cent relative reduction in the prevalence of insufficient physical activity by 2030.

➲ Ministers of health and education from across the region issued a call to action to scale up the implementation of comprehensive health programmes in schools, including by facilitating physical activity.

GCTM in India:

➲ In March 2022, WHO and the Indian government signed an agreement to establish the WHO Global Centre for Traditional Medicine (GCTM) in Jamnagar, India.

➲ The GCTM which is supported by an investment of USD 250 million from the Centre has a strategic focus on evidence and learning, data and analytics, sustainability and equity, and innovation and technology, with the overall aim of optimising the contribution of TRM to global health and sustainable development.

➲ The mission of the GCTM aligned with the region's long-standing focus on strengthening traditional medicine (TRM) system performance monitoring, increasing safety monitoring for such products, enhancing research capacity and integrating safe and effective TRM into health service delivery, especially at the PHC level.

International Yoga Day 2022:

➲ The word 'yoga' is derived from the Sanskrit root 'Yuj' whichsymbolises the union of body and consciousness.

➲ The idea of International Yoga Day was conceived by Prime Minister Narendra Modi, who proposed the concept on September 27, 2014, during his speech at the UN General Assembly.

➲ The United Nations proclaimed 21 June as the International Day of Yoga on December 11, 2014.

⮕ Consequently, the first International Yoga Day was observed on June 21, 2015.

Theme:

⮕ The theme for International Yoga Day 2022 is 'Yoga for Humanity'.

UNITED NATIONS UNVEILS ACTION AGENDA ON INTERNAL DISPLACEMENT

Why in news?

⮕ Recently,United Nations Secretary-Generalreleased the Action Agenda on Internal Displacement.

⮕ The Action Agenda sets out 31 commitments by the UN system to better resolve, prevent and address internal displacement crises. It also includes calls to member states, international financial institutions, the private sector and other actors.

Issue ofinternally displaced persons (IDP):

⮕ The world was at a breaking point due to longer-lasting conflicts and increasingly frequent climate-related disasters. This had led to the number of IDPs doubling over the last 10 years, with women, children and marginalised groups often facing the greatest impacts.

⮕ Some 216 million people could be forced to move internally by 2050 in just six regions due to climate change if immediate action is not taken, according to the World Bank.

⮕ The Russian invasion of Ukraine, which began February 24, has driven 13 million people out of their homes and communities, nearly two-thirds of whom remain in Ukraine.

THE UNITED NATIONS SECRETARY-GENERAL'S ACTION AGENDA ON INTERNAL DISPLACEMENT

Follow-Up to the Report of the UN Secretary-General's High-Level Panel on Internal Displacement

The Agenda:

The Action Agenda on Internal Displacement has three overarching goals:

a) To help internally displaced persons find durable solutions

b) To better prevent future displacement crises

c) To ensure stronger protection and assistance for those currently facing displacement.

IDP's rights:

⮕ The first goal can only be achieved if the rights and agency of IDPs of all ages, genders and diversities are recognised. This would mean respecting IDPs' right to choose what was best for them and allowing them to participate in decisions that would affect them.

⮕ Also, host communities and those in areas of return or future settlement needed to be engaged.

⮕ The primary responsibility of facilitating sustainable solutions to suitable displacement rested with states. Among other things, he called for greater action from and support to local and city authorities, as IDPs are increasingly settling and residing in urban areas worldwide.

Special Adviser on Solutions to Internal Displacement:

⮕ The UN had appointed a time-bound Special Adviser on Solutions to Internal Displacement.

⮕ The Special Adviser will work in concert with a Steering Group on Solutions to Internal Displacement, which will engage at the global and country levels to drive stepped-up action and one-UN approaches to solutions.

Commitments to prevent future crises:

⮕ It has also outlined commitments to prevent future crises. These would include working with governments, regional organisations, local communities and civil society to address the root causes of displacement and to promote peacebuilding, social cohesion and mediation that considers displacement risks.

⮕ When there are early signs of conflict, renewed violence or threats to civilians, mobilise rapid action to support de-escalation, political negotiation and conflict resolution, and systematically address internal displacement as part of these efforts.

⮕ Other commitments in meeting this goal centred on climate change-related displacement. For instance, the UN will address displacement proactively and systematically as part of the UN's work on climate change, including by supporting the work on the Task Force on Displacement under the Warsaw International Mechanism for Loss and Damage.

IDPS in India:

⮕ India saw 4.9 million internal displacements in 2021, according UN report based on data provided by the Switzerland-based non-profit Internal Displacement Monitoring Centre.

⮕ The country ranked third in terms of most internal displacements due to disasters after China (6 million) and the Philippines (5.7 million).

Three instances of IDPs in India:

⮕ Adivasis, who bore the brunt of major developmental projects such as big dams

- Coastline dwellers such as those in Satabhaya in Odisha, where seven villages were being swallowed by the sea
- Thousands of tribals in Chhattisgarh who had been forced to migrate to Khammam in Telangana due to the conflict between Maoists and the SalwaJudum.

Way Forward:

- India has a policy in place for dam-displaced people. But it does not have one for those displaced by political conflict or environmental reasons.
- It is time that India makes a policy on internal displacement in line with the UN Action.

INDIA-VIETNAM DEFENCE PARTNERSHIP

Context:

- The furtherance of India's Act East Policy, maritime multilateralism, maritime security outreach and the building of stronger networks across the Indo-Pacific are some of the key elements which have made New Delhi and Hanoi natural partners.

Joint Vision Statement on India-Vietnam Defence Partnership towards 2030:

- The two countries recently deepened bilateral cooperation with the signing of the Joint Vision Statement on India-Vietnam Defence Partnership towards 2030 during the recent visit of India's Defence Minister to Vietnam.
- The Joint Vision Statement is aimed at boosting the scope and scale of the existing defence cooperation between the two nations.
- Both sides undertook extensive deliberations to expand avenues of effective and practicable collaboration in bilateral defence engagements pertaining to regional and global issues.

Line of Credit:

- In the meeting, the early finalisation of the $500 million Defence Line of Credit extended by India to the latter along with the implementation of existing projects which would complement India's 'Make in India, Make for the world' and Hanoi's defence capabilities were also discussed.

Comprehensive Strategic Partnership (CSP):

- The two sides also signed a Memorandum of Understanding (MoU) on mutual logistics support.

- This is the first agreement of its kind that Vietnam has entered into with any other country and elevates the standing of Comprehensive Strategic Partnership (CSP) which it shares with India since 2016 (along with only Russia and China).
- Earlier in January 2022, on the 50th anniversary of the establishment of diplomatic ties, India reaffirmed its commitment to the CSP.

Indo-Pacific and potential:

- Because of the volume of maritime trade that passes through sea lanes of communication in the Indo-Pacific and potential as well as estimated energy reserves in these waters, maritime cooperation between countries in the region have expanded exponentially.
- Undoubtedly, for India and Vietnam too, the maritime domain in particular has occupied a central focus.
- Both countries find convergence in their approaches towards the maintenance of stability and security of the Indo-Pacific which has translated into diplomatic and political support in the context of developments within the region and manifested in the form of tangible and functional cooperation instruments, the most vital being bilateral defence partnership.
- The enhanced geostrategic prominence and attendant uncertainties vis-à-vis China's expanding and often abrasive footprints in the Indo-Pacific have resulted in an overall increase in emphasis on cooperative mechanisms and frameworks across the region.

Defence partnership:

- Defence partnership between the two countries has been growing steadily following the signing of the Defence Protocol in 2000.
- Today it covers extensive navy-to-navy cooperation spanning the exchange of intelligence, production and logistical support for Vietnam's defence requirements, development of naval facilities such as NhaTrang, defence dialogues, high-level visits and the supply of warships and cruise missiles.

Vietnam's position in the South China Sea:

- Vietnam has and continues to be one of the most vocal countries with respect to China's periodic transgressions in the South China Sea.
- In India, Vietnam has found an equally uncompromising partner when it comes to the question of violations of freedom of navigation and threats to sovereign maritime territorial rights as enshrined under international maritime law.
- Indeed, it is believed that Vietnam used the term Indo-Pacific for the first time in 2018 in its joint statement with India.
- India has supported Vietnam's position in the South China Sea with respect to China's destabilising actions and coercive tactics backing the verdict of the Permanent Court of Arbitration in the case brought by

Manila in 2016 and reiterating the irrefutability of the UNCLOS.

Oil exploration by India:

➥ India has also not backed down from continuing ONGC Videsh Ltd (OVL)'s oil exploration project in Block 128 (which is within Hanoi's EEZ) despite China's protests.

➥ In 2020 China's incursion into Ladakh was quickly followed by the deployment of warships by India to the South China Sea in an instance of asymmetrical warfare and a signalling that India will not stand down.

➥ These instances together with the deepening of India's operational outreach in the Indo-Pacific have successfully indicated and cemented its role as a capable, willing and reliable partner.

Vietnam's engagement with global world:

➥ It is also in the last few years that Vietnam has augmented its emphasis on naval diplomacy and strengthened its ties with the US alongside the extension of its engagement with India and other ASEAN members.

➥ Many 'firsts' have occurred in this period including the visit of Japanese submarine Kuroshio in 2018 which docked at the Cam Ranh International Port; the visit of Canadian naval ships to the Cam Ranh military base in 2019; the signing of the Framework Participation Agreement between Hanoi and the EU which facilitates the former's participation in the EU's Common Security and Defence Policy (CSDP) missions and operations with Vietnam being the first among ASEAN member countries to do so.

Way Forward:

➥ Despite the fact that the China factor has provided impetus to the solidification of ties, it is also important to consider that mutual cooperation is not driven solely by it.

➥ Both countries have expanded areas of collaboration and are supportive of each other's individual and multilateral involvements within the rubric of the Indo-Pacific.

➥ Convergences between India and Vietnam has thus naturally found expression in bilateral relations and the two countries are poised to develop their partnership further in the coming years.

UAE TRUMPS G7

Why in news?

➥ India Prime Minister is attending two summits; he is a 'special invitee' at the 48th G7 Summit at SchlossElmou in Germany.

➥ After that, he has a bilateral summit in Abu Dhabi with the UAE President.

Why UAE is more important to India?

➥ If the U.S. is exempted, no G7 country comes close to the UAE as India's trading partner, exports market,

Indian diaspora base and their inward remittances.

➥ The UAE invested more in India in 2021 than Germany and France combined.

➥ Unlike the UAE, none of the G7 countries has yet signed a bilateral Comprehensive Economic Partnership Agreement (CEPA) with India.

India-UAE synergy:

➥ The current India-UAE synergy is largely due to Prime Minister Modi's efforst. This would be his fourth visit to Abu Dhabi and sixth summit with Sheikh Mohammed over the past seven years.

➥ These have re-energised this historic, but long-dormant, relationship. The visits have plenty to show from Emirati investments in Jammu and Kashmir to a CEPA.

Relevance of current Abu Dhabi summit:

➥ As Sheikh Mohammed has been the de facto President since Sheikh Khalifa suffered a stroke in 2014, the change at the helms means little in the practical term.

➥ However, this being the only second transition at the top since the formation of the UAE in 1971, it is significant.

➥ It symbolises political stability and continuity in a turbulence-prone region.

➥ Indian PM would probably be the first non-Arab leader to be received in Abu Dhabi after the 40-day State mourning ended on June 22.

➥ Thus, the Abu Dhabi summit would be a useful opportunity to recalibrate the bilateral ties and open new vistas following the operationalisation of the bilateral CEPA from May 1.

Changes since the pandemic:

➥ Significant changes in the bilateral, regional and global context have taken place since the two leaders last met in August 2019.

➥ Their bilateral trade grew by 68% in 2021-22 to $72.9 billion, a new record. While both exports and imports grew, the trade deficit reached $16.8 billion, also a new record.

➥ Due to the CEPA, the robust economic revival, higher oil prices and larger Indian imports, trade is likely to grow even higher in 2022-23.

Opportunities:

- As the UAE collects petrodollars, India, the world's fastest-growing major economy, could be a lucrative market for investments in areas such as petrochemicals, pharmaceuticals, renewables, infrastructure, manufacturing, logistics, start-ups, etc.
- A lot has already been done to streamline the manpower sector, including skilling the young Indian labour force to suit the Emirati requirements, but more can be done.
- The two sides can collaborate for the eventual reconstruction of the war-ravaged regional countries such as Yemen, Syria, Somalia, Iraq, Libya and Afghanistan.
- In the bilateral political domain, the two sides have cooperated efficiently on security and anti-terrorism, but they need to do more to fight money laundering and the flow of illicitnarcotics.

Changing UAE:

Israel:

- The South West Asian region is a complex and evolving area. The UAE has disrupted the longstanding Arab Israeli stalemate by normalising relations with Israel in 2020. The two sides have recently signed a bilateral CEPA.

Regional hotspots:

- After pursuing a muscular regional foreign policy against political Islam and in regional hotspots such as Syria, Yemen, Libya, Sudan, and Somalia, Abu Dhabi seems to have decided to stage a phased withdrawal and improve ties with Syria, Qatar and Turkey.
- The ties with Saudi Arabia remain somewhat edgy, due to policy divergences and economic competition.

Russia & China:

- Similarly, Abu Dhabi has developed some ruction with the Biden presidency in the U.S. and is diversifying its strategic options with Russia and China.
- It has conspicuously ignored the plea by the U.S. and other Western countries to raise its oil production.

Way Forward:

- India, the UAE's second-largest trading partner, and largest source of tourists and manpower, can be a useful ally.
- Against this ongoing regional and global flux, the India-UAE summit is both topical and opportune and can have an impact beyond the bilateral context.

SPEAKER'S POWERS IN A REBELLION

Why in news?

- While granting interim relief to rebel MLAs of the Shiv Sena , the Supreme Court made a crucial but unusual judicial intervention that raises questions on the powers of the Speaker under the Tenth Schedule of the Constitution.

- The Speaker's powers under the Tenth Schedule have been previously upheld by the Supreme Court itself; the court has allowed judicial review only once the Speaker has made a decision, and has ruled out interference with the process.
- The question of when a floor test will be held in the Maharashtra Assembly, meanwhile, remains unclear.

What does the interim order say?

- The interim order grants more time to the rebel MLAs to reply to the disqualification notice served on them. It seeks affidavits from them, and also a counter-affidavit from the Deputy Speaker on his removal as demanded by the rebels.
- In granting more time, the Supreme Court has essentially delayed the disqualification proceedings, which would have a direct impact on a trust vote in the Assembly, whenever it takes place.
- The issue of considering the removal of the Deputy Speaker himself is more complex and raises questions on the sanctity of the Tenth Schedule.

What does the Tenth Schedule say?

- The Tenth Schedule or the anti-defection law, introduced in 1985, gives the Speaker of the House the power to disqualify legislators who 'defect' from the party.
- In the landmark case Kihoto Hollohan versus Zachillhu in 1992, the Supreme Court upheld the power vested in the Speaker and said that only the final order of the Speaker will be subject to judicial review.
- Courts have refrained from interfering with the process itself.However, a 2016 ruling of a Constitution Bench of the Supreme Court has shifted the balance on the powers of the Speaker.
- In the landmark Nabam Rebia v Bemang Felix case, concerning a constitutional crisis in Arunachal Pradesh then, a five-judge Bench of the SC limited the Speaker's powers.

What was the Nabam Rebia ruling?

- While the larger legal issue in the Nabam Rebia ruling was on the contours of the powers and limitations of the Governor, the issue of anti-defection also came up.
- On that point, the Supreme Court held that it is "constitutionally impermissible" for a speaker to proceed with disqualification proceedings, if a no-confidence motion against him is pending.
- The action of the Speaker in continuing, with one or more disqualification petitions under the Tenth Schedule, whilst a notice of resolution for his own removal, from the office of Speaker is pending, would 'appear' to be unfair.
- If a Speaker truly and rightfully enjoys support of the majority of the MLAs, there would be no difficulty whatsoever, to demonstrate the confidence which the members of the State Legislature, repose in him.

➲ This ruling gave a window to defecting legislators to stall or circumvent the Tenth Schedule by seeking removal of the Speaker when disqualification proceedings are anticipated, effectively tying the hands of the Speaker.

Have legislators used this legal route?

➲ Yes, since 2016, this legal route has a been a familiar playbook for legislators cutting across states and political affiliations.

➲ In 2016, rebel MLAs of the Congress including Vijay Bahuguna sought removal of Uttarakhand Assembly Speaker Govind Singh Kunjwal after shifting ranks to the BJP to stall anti-defection proceedings.

➲ In 2018, AIADMK legislator S Karunas sent a notice to the Tamil Nadu Legislative Assembly Secretary K Srinivasan, seeking removal of Speaker P Dhanapal at a time when the AIADMK leadership was mulling action against Karunas and three other MLAs for having pledged their support to T T V Dhinakaran.

➲ In June 2020, the Congress in Manipur served a notice for the removal of Speaker Y Khemchand as nine of its MLAs defected to the BJP.

How can the Speaker be removed?

➲ Under Article 179 of the Constitution, a Speaker can be removed by a resolution of the Assembly passed by a majority of "all the then members of the Assembly". The process begins with notice of at least 14 days.

➲ In the 2016 Nabam Rebia ruling, the Supreme Court interpreted Article 179, specifically the term "all the then members of the Assembly", to mean the composition of the house at the date/time of giving the notice for the removal of the Speaker.

➲ This interpretation would mean that the composition of the Assembly cannot be changed from the date of issuing of a notice of the removal of the Speaker, and therefore the Speaker cannot make any decisions under the Tenth Schedule to change the composition of the House until the question of his removal is settled.

➲ During the hearing on the Maharashtra situation, senior advocate Neeraj Kishan Kaul, appearing for the rebel Shiv Sena MLAs, referred to the 2016 Nabam Rebia ruling to argue that the Deputy Speaker of an Assembly cannot decide on disqualification of MLAs while a motion for his or her removal is pending.

What were the reasons for the Supreme Court's 2016 decision?

➲ The Supreme Court's reasoning in barring the Speaker from acting under the Tenth Schedule when a notice for his own removal is pending, is to ensure that the Speaker who disqualifies legislators must enjoy the confidence of the Assembly.

➲ "After all, disposal of the motion under Article 179(c), would take no time at all. As soon as the motion is moved, on the floor of the House, the decision thereon

will emerge, forthwith. Why would a Speaker who is confident of his majority, fear a floor test? After his position as Speaker is affirmed, he would assuredly and with conviction, deal with the disqualification petitions, under the Tenth Schedule. And, why should a Speaker who is not confident of facing a motion, for his removal, have the right to adjudicate upon disqualification petitions, under the Tenth Schedule?" the Supreme Court had said in Nabam Rebia.

➲ This interpretation would mean defection is followed by an immediate floor test and not proceedings of the Tenth Schedule.

➲ A floor test is the ultimate step in ascertaining majority in the House, but legal experts have criticised that 2016 interpretation saying it would not lead to ascertaining "real majority" that is determined after punishing defecting MLAs.

G7 LEADERS' SUMMIT 2022

Why in news?

➲ Recently, the G7 Leaders' Summit 2022 took place in the Bavarian Alps, Germany.

➲ The meeting of G7 leaders was an important one since it took place against the backdrop of a triple crisis: The war in Ukraine, the challenge of post-pandemic economic recovery and the eternal issue of climate change.

➲ In the circumstances, the G7 countries managed to present a united front which was noteworthy.

Support for Ukraine:

➲ A standalone G7 Statement on Support for Ukraine was issued.

➲ There was an unconditional commitment that the grouping will provide financial, humanitarian, military and diplomatic support and stand with Ukraine for as long as it takes. Predictably, the statement comes down very hard on Russia and comes close to accusing it of war crimes.

➲ Russia was also warned that any use of chemical, biological and nuclear weapons would be met with severe consequences.

➲ Further intensification of sanctions against Russia was contemplated, including tariffs on Russian products, targeting gold exports, capping oil prices and restricting access to technology.

What it translates in real terms?

➲ Despite the toughly-worded statement, it is unlikely the war in Ukraine will come to a quick halt. Indeed, the G7 statement may have the opposite effect of increasing Russia's intransigence.

➲ Worse, increasing military assistance by the West to Ukraine, evidenced by the impending supply of the Norwegian Advanced Surface-to-Air Missile System (NASAMS, used by the Americans to protect the White House) by the US to Ukraine, could lead to an arms race.

➲ Russia too, by relentlessly pursuing hostilities in the Donbas region, is not helping matters.

NATO's move:

➲ NATO, ahead of its summit meeting in Madrid following the G7 Summit, has already let it be known that its rapid reaction force, meant to protect the alliance's Eastern flank, will be increased from its present strength of 40,000 to a whopping 300,000.

➲ NATO's Secretary-General minced no words when he termed Russia as the most immediate threat to NATO's security and hinted that the alliance's deployments will now be much closer to Russian borders.

➲ More fundamentally, the NATO concept of deterrence when it comes to the Baltic states appears to have undergone a paradigm shift. The alliance has made its resolve clear to protect every inch of its territory.

G7 on China:

➲ Significantly, the G7 final communique has tough language on China as well. It says there is no legal basis for China's expansive maritime claims in the South China Sea, it calls on China to press Russia to withdraw troops from Ukraine and expresses grave concern about the country's human rights situation.

➲ It calls on China to respect universal human rights and fundamental freedoms in both Tibet and Xinjiang, highlighting the issue of forced labour in the latter.

India' bilateral meeting at G7 Summit:

➲ For India, G7 summits have always been an invaluable opportunity to exchange views not just in a plurilateral format but also in the bilateral meetings on the margins of the main meetings.

➲ Prime Minister Narendra Modi's meetings with the US President and President of France, as also with the leaders of the UK and Japan, were extremely timely.

➲ The meeting with the Canadian PM was useful, too, given the recent ups and downs in the relationship between the two countries.

➲ The meetings with Indonesian, South African and Argentinian leaders may be seen against the impending assumption of the G20 presidency by India. India will be consulting closely with Indonesia to see how the Ukraine issue plays out at the G20 meeting.

What it holds for India?

➲ As for India, its importance lies in the undeniable truth that no global problem can be seriously tackled without India's involvement.

➲ The question is whether India can use this to make the full transition from being a rule-taker to becoming a rule-shaper in at least some crucial areas.

➲ India has lent its name to two statements issued by the G7. One is titled "Resilient Democracies Statement" and the other is "Joining Forces to Accelerate Clean and Just Transition towards Climate Neutrality".

"Resilient Democracies Statement":

➲ This statement talks of democracies as reliable partners seeking to promote a rules-based international order and supporting democracy worldwide including through electoral assistance.

➲ It is interesting to note that these democracies have also recommitted to fighting climate change, improving food security, pursuing concerted efforts to overcome the Covid-19 pandemic, fighting corruption, protecting freedom of expression, both online and offline, and ensuring an open and secure internet.

➲ This is a tall order for even perfect democracies. But it is an excellent message to send to countries like China and arguably, Russia.

"Joining Forces to Accelerate Clean and Just Transition towards Climate Neutrality":

➲ This is the statement to which India is a signatory is the one on clean and just transition towards carbon neutrality. PM Modi made a forceful intervention on how India, without being responsible for the problem of climate change, is doing everything in its power to be part of the solution.

➲ He also made a fervent plea to the Western countries to invest heavily in India's renewable energy market.

Way Forward:

➲ The G7 is trying hard not to be yesterday's club. It is still a powerful grouping, with seven of its members in the top 10 economies of the world, three of them permanent members of the UNSC and if you count the EU, it is still home to some of the best emerging technologies.

➲ India's participation in this meeting as an observer serves to advance its foreign and security policy objectives and will keep it in good stead when it assumes the G20 presidency in December.

CHINA'S INTERVENTIONS IN THE HORN OF AFRICA

Why in news?

➲ China has been investing across the African continent throughout the last decade. While the emphasis has been on investments and raw materials, it took a new turn recently, with the first "China-Horn of Africa Peace, Governance and Development Conference."

➲ China's first special envoy to the region Xue Bing, said that this is the first time China aims "to play a role in the area of security".

➲ The conference held in Ethiopia witnessed the participation of foreign Ministries from the following countries of the Horn: Kenya, Djibouti, Ethiopia, Sudan, Somalia, South Sudan, and Uganda.

What are the recent projects between China and countries from the Horn of Africa?

➲ China's focus on the Horn is a part of its focus on Africa.

➲ In January 2022, during his 17th trip to Africa, China's Foreign Minister focused on increasing the infrastructural investments in African countries.

Three objectives:

➲ He refuted accusations of debt-trapping the countries and asserted China's three objectives in Africa:controlling the pandemic, implementing a Forum on China-Africa Cooperation (FOCAC) outcomes, and upholding common interests while fighting hegemonic politics.

➲ The FOCAC promotes China's role in the infrastructural and societal development of the Horn.

➲ In the 2021 forum, the entire region of the Horn participated and four resolutions were adopted: the Dakar Action Plan, the China-Africa Cooperation Vision 2035, the Sino-African Declaration on Climate Change and the Declaration of the Eighth Ministerial Conference of FOCAC.

➲ During the COVID-19 pandemic, China donated over 3,00,000 vaccines to Ethiopia and Uganda, and 2,00,000 vaccines to Kenya and Somalia. Sudan and Eritrea have also benefited from China's vaccine diplomacy.

2035 vision for China-Africa cooperation:

➲ China has also initiated the "2035 vision for China-Africa cooperation"; it aims to transform the health sector, alleviate poverty, promote trade and investments, and expand digital innovation.

➲ The vision also focuses on green development, capacity building, improving people-to-people exchanges and facilitating peace and security in the continent.

What are China's primary interests/investments in the Horn of Africa?

➲ China's interests are related to four major areas: infrastructural projects, financial assistance, natural resources and maritime interests.

Infrastructural Projects:

➲ Looking at Chinese investments in infrastructure, one of its landmark projects was fully funding the $200 million African Union headquarters in Addis Ababa.

➲ It has also made significant investments in railways; it is building the Addis-Djibouti railway line connecting the land-locked country with Eritrean ports in the Red Sea.

➲ China has also invested in the Mombasa-Nairobi rail link in Kenya, and has already delivered on railway projects in Sudan.

➲ It also has a viable military hardware market in Ethiopia and has built over 80 infrastructural projects in Somalia, including hospitals, roads, schools and stadiums. In Djibouti, 14 infrastructural projects are funded by China.

Financial Assistance:

➲ With respect to financial assistance, Ethiopia, is one of the top five African recipients of Chinese investments, and also has a debt of almost $14 billion.

➲ China accounts for 67% of Kenya's bilateral debt. In 2022, China promised to provide $15.7 million assistance to Eritrea.

Natural resources:

➲ The third major Chinese interest in Africa is the presence of natural resources; oil and coal. China has invested $400 million in Mombasa's oil terminal.

➲ China is also interested in minerals such as gold, iron-ore, precious stones, chemicals, oil and natural gas in Ethiopia.

➲ South Sudan, a source for petroleum products, has had continued Chinese investment in the industry since the latter's initial entry in 1995.

Maritime interests:

➲ China's first and only military base outside its mainland is in Djibouti.

➲ China is willing to develop Eritrea's coast which would connect to China's investments in land-locked Ethiopia.

➲ The U.S. has speculated that China wishes to build another military base in Kenya and Tanzania, thereby increasing its military presence in the region.

Has the Horn of Africa been welcoming of China's presence?

➲ Despite the wariness surrounding China's projects in Africa, the governments have mostly been welcoming. When conflict broke out in Tigray in November 2020, Addis Ababa appreciated China for respecting Ethiopia's sovereignty.

- In December 2021, Kenya defended Chinese projects in the country; President maintained that China-Africa partnership was mutually beneficial.
- In November 2021, Uganda's President suggested that China give access to its markets, in a fashion similar to the U.S. or Europe.
- Similarly, in May 2022, the East African Community (EAC) said the EAC would welcome Chinese investors to work in East Africa for the prosperity of the people.

Is China's new focus on peace in the Horn a shift from Beijing's principle of non-intervention?

- Peace and stability is a mutual requirement for China and Africa. For Africa, Chinese investments could lead to stable environments which could help the countries achieve their peace and development objectives. For China, conflict in the region comes at a heavy cost.
- In Ethiopia when the conflict broke out, over 600 Chinese nationals, working on different projects, were evacuated, putting several investments at risk.
- From a trading perspective, the region plays a significant role in achieving the objectives of the China-Africa Cooperation Vision 2035.

Way Forward:

- China's move towards peace in Africa indicates a shift in its principle of non-intervention. It is China's message that its presence in the continent has a larger objective and is not likely to be limited to the Horn of Africa.
- This includes an aim to project itself as a global leader and boost its international status.
- Further, the recent developments imply that China is focussing on a multifaceted growth in the continent for the long run.
- For Africa, China's presence is an alternative to the European powers, many of whom are facing criticism from African governments.
- Further, African governments, which do not conform to Western standards of democracy, interact better with powers like China and Russia.

BANGLADESH'S PADMA BRIDGE & ITS CHINESE LINK

Why in news?

- Recently, Bangladesh's Prime Minister inaugurated the Padma Multipurpose Bridge across the Padma River, calling it "a symbol of pride." The bridge is currently the longest in the country.
- The bridge will connect nearly 30 million people living in the country's less-developed southwestern region with the capital Dhaka and other areas.
- A few days ahead of the inauguration, the Bangladesh government issued a clarification, dismissing reports linking the construction of the bridge to the China-led Belt and Road Initiative (BRI).

Self- Financed:

- The infrastructure project was self-financed by the Bangladesh government despite the apprehensions of experts. The bridge was constructed at a cost of $3.6 billion.
- Besides its potential to transform trade and communication in the region, the government estimates that the Padma Bridge will boost the country's GDP by 1.2 per cent
- A construction firm from China was involved in the construction of the bridge for Bangladesh.

Project timeline:

- Since its formation in 1971, building a bridge over the Padma to narrow the gap between developed and non-developed regions has been Bangladesh's most ambitious project.
- In 1998-99, a pre-feasibility study was first conducted under the leadership of the then PM Sheikh Hasina. The project was started again after Ms. Hasina returned as the PM in 2009.
- In 2012, the World Bank cancelled its $1.2 billion funding, saying it had "credible evidence" of high-level corruption among Bangladeshi officials.
- Following the setback, the Bangladesh government took matters into its own hands and decided to self-finance the ambitious project. In 2014, a deal was signed with China Railway Major Bridge Engineering Group, a state-owned entity in China. The construction began in the same year.

Features:

- The main structure, 6.15 km long and 22 m wide, has a four-lane highway and is accompanied by a 3-km-long viaduct and around 12 km of access roads to connect neighbouring districts.
- It connects the Mawa bank to the north and the Janjira area south of the Padma river, which is known for the vast volume of water it carries most of the year which makes it look like a sea.

Railway bridge connecting India:

- The lower level of the bridge has a railway track, which is expected to be opened by 2024. This railway line will drastically reduce the travel time between

India and Bangladesh — giving a significant boost to trade and commerce between the two countries.

⊃ At present, the Maitree Express completes the 400-km journey from Kolkata to Dhaka Cantonment in 10 hours. After the inauguration of the railway line, the distance will reduce to about 250 km, which the Maitree Express can cover in around three hours.

China's false claim:

⊃ Earlier, a group called the 'Bangladesh-China Silk Road Forum', or BCSRF launched in 2019 to "focus on lasting links between the two countries under the Belt and Road Initiative (BRI) of China" sent media invites regarding a panel discussion on June 22.

⊃ The topic of discussion was 'The Padma Bridge: An Example of Bangladesh-China cooperation under Belt and Road Initiative', with the invite mentioning the Chinese Ambassador in Dhaka as the chief guest for the occasion.

⊃ The BRI, launched by Chinese President Xi Jinping in 2013, is a multi-billion-dollar initiative aimed at financing and building infrastructure projects, especially in developing countries, to enhance its influence across the world.

⊃ However, Bangladesh did not seem pleased with these developments that took place hours before the inauguration of the Padma Bridge, with the Ministry of Foreign Affairs (MoFA) issuing a statement decrying attempts to link the Padma Bridge project with the BRI.

Concerns with BRI:

⊃ Over the years, China has increased its investment rapidly in Bangladesh after the two countries began their strategic partnership in 2016.

⊃ Bangladesh is one of the largest recipients of funding for infrastructure projects under the BRI, with over $26 billion in Chinese investments and $38 billion in funding commitments.

⊃ Though the South Asian country is eager to develop its infrastructure, it has adopted a cautious and selective approach to handling its economic relationship with the BRI amid growing concerns over the Chinese debt trap.

⊃ The initiative has attracted allegations of debt-diplomacy, especially after Sri Lanka handed over its Hambantota Port as a debt swap to China in 2017.

⊃ Malaysia has also deferred several projects under the BRI, citing cost revaluation.

India-Bangladesh bilateral relations:

⊃ Further, the BRI has been a major bone of contention between India and China as one portion of the corridor passes through Pakistan-occupied Kashmir.

⊃ Bangladesh and India share close bilateral ties. To strike a balance and not to upset its neighbour, also its "most important partner", Bangladesh is therefore treading the path cautiously.

TURKEY MADE PEACE WITH SWEDEN AND FINLAND JOINING NATO

Why in news?

⊃ Recently, the North Atlantic Treaty Organization (NATO) announced the signing of a memorandum of understanding (MoU) between Turkey, Finland and Sweden in a trilateral meeting held in Madrid, Spain.

⊃ The MoUwas signed once the Finland President and Sweden Prime Minister agreed to address the national security concerns of Turkey.

⊃ Following this assurance, Turkey President agreed to support Finland and Sweden in their bid to join NATO.

The key provisions of the MoU include the following three points:

a) A joint commitment between Turkey, Finland, and Sweden to counter terrorism;

b) Addressing the pending extradition of terror suspects through a bilateral legal framework, and

c) Investigating and interdicting "any financing and recruitment activities of the PKK and all other terrorist organisations.

⊃ Besides the above, Finland and Sweden assured that "their respective national regulatory frameworks for arms exports enable new commitments to Allies".

⊃ Both countries also promised to stand against disinformation and to fully commit to EU's CSDP (Common Security and Defence Policy) and Turkey's participation in the PESCO (Permanent Structured Co-operation) Project on Military Mobility.
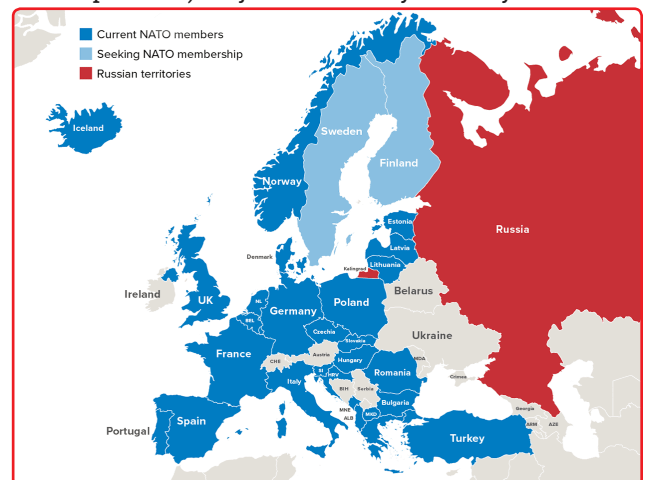
Why did Turkey withdraw its opposition?

⊃ Turkey was initially against Finland and Sweden joining NATO. Though there were no direct bilateral issues between Turkey with Sweden and Finland, the former was against the latter for their position on the Kurdish issue and extradition of activists.

Turkey, after negotiations, agreed to withdraw its opposition for the following reasons:

Counter-terrorism provisions:

- First, Finland and Sweden should promise to address counter-terrorism provisions within their countries.
- Finland has committed to modify its criminal code, and Sweden has assured to implement the new "Terrorist Offenses Act" from July 1.

Kurdish activists:

- Second, Turkey had raised concerns about Finland and Sweden being home to Kurdish activists and militant organisations.
- Finland and Sweden have now agreed to execute the pending "deportations or extraditions" of listed 'terror' suspects made by Turkey.

Arms embargo:

- Third, lifting the arms embargo. There has been no clear definition about the category of weapons, but Finland and Sweden will remove the arms embargo against Turkey.
- Since Finland and Sweden have addressed all the above primary concerns of Turkey, Ankara has decided to withdraw its opposition to Helsinki and Stockholm.

Why have Finland and Sweden agreed to address the concerns raised by Turkey?

- The earlier positions of Finland and Sweden on Turkey were based more on their principles relating to democracy, 'separatism', the rule of law etc.
- Their support to Kurdish activists from Turkey was based on their larger principles than any specific bilateral problem with Turkey.
- Both Helsinki and Stockholm have agreed to revisit their position on Turkey, primarily due to the threat from Kremlin.
- The security threat from Russia looms large in the national capitals of Finland and Sweden today as Russia's military aggression on Ukraine continues.
- The fear of their own national security has pushed both nations to join NATO which in turn has made them agree to Turkey's conditions.

What does this mean for Russia?

- Russia shares a 1,340 kilometre long border with Finland. Sweden, though it does not share a land border, shares the Baltic Sea with Russia. The land/sea borders with Russia place both countries under direct threat from the Kremlin.
- Russia has cautioned Finland and Sweden on continuing with their decision to join NATO. It underlined that there are no territorial disputes with these two countries; hence they should not worry about any security threat from Russia.
- Since 1948, Finland, Sweden and Russia have maintained economic cooperation, but the relations always remained strained due to the Cold War and Finland's neutrality principle. If Sweden and Finland join NATO, it means an enlarged presence of the latter around the west and north of Russia.

- This would go against the very objective of Russia interfering in Ukraine — maintaining Russian influence in its immediate neighbourhood.
- Also, whether the two countries joining NATO will undermine Russia's interests in the Arctic remains to be seen. Both Sweden and Finland are part of the Arctic States; Russia currently holds the Arctic Council chair and will remain the chair until 2023.
- For Russia, Finland and Sweden joining NATO not only means an increased NATO presence in its neighbourhood but also questions its Arctic interests.

What does this mean for NATO?

Strengthening the alliance:

- Both Finland and Sweden which have followed the non-alignment principle have broken from their natural rule and decided to join NATO.
- This does not only mean guarantee of security against Russia but it also gives NATO the power to engage.

NATO will gain strategic ground to counter Russia:

- The addition of more allies means a steady expansion of the NATO towards the East, through which it will now be able to exercise its military operations both on land and in the Baltic Sea, where Russia holds a strategic position.
- NATO will now also be able to position its weapon systems further its combat formation and plan its attack techniques to power up deterrence and defence.
- In 1997, NATO initiated the rapprochement in order to build bridges with Russia. However, with Russia annexing the Crimean Peninsula in 2014 and launching a war in Ukraine, NATO's rapprochement efforts came to an end. So currently, this might seem an impossible act for both parties.
- However, with NATO encircling Russia from the West, Russia might consider the option to meet at the table at a later stage.

A secured Euro-Atlantic:

- NATO presence in the region will securitise and safeguard the Baltic states, Estonia, Latvia and Lithuania, which were earlier at risk due to their close proximity to Russia and Russian attacks.
- This will not only help Ukraine win the war but will also enable NATO to bring in advanced weapons such as fifth-generation aircraft, technological weapon systems and strong political institutions across the allied countries.

ECONOMY

POLITICAL ECONOMY OF SUGAR EXPORT CURBS

Why in news?

- After the wheat export ban, the government decided to restrict sugar exports, setting a cap of 10 million

tonnes (mt) for the current marketing year of sugarcane crop.

- India is the world's largest producer of sugar and the No 2 after Brazil.
- The Directorate General of Foreign Trade (DGFT) notified the ban on export of sugar from June 1 beyond the quota limit.

Why this ban has been imposed?

- The key reasons cited are to ensure domestic availability and price stability under rising inflationary pressures.
- It is also aimed at orderly trade in the context of ever-increasing export shipments of sugar breaching the previous records of more than 7.2 mt.
- The government is also concerned over the threat of food crisis caused by supply-chain disruption(s); hence one dimension of export restriction is also aimed at supplying sugar to countries in economic distress, and friendly nations thus increasing India's diplomatic outreach along with taming speculative trading.

Reason for Imposing Ban

- To ensure domestic availability and price stability.
- Aimed at orderly trade in the context of ever-increasing export shipments of sugar breaching.
- Threat of food crisis caused by supply-chain disruption(s)

Ethanol blending:

- The other reasons for the export ban are, first, the government intends to encourage ethanol blending. India is about to touch the target of 10 per cent ethanol blending, with 9.99 per cent already achieved in March.
- Incidentally, the Union Cabinet amended the National Policy on Biofuels on May 18 by approving the decisions of the National Biofuel Coordination Committee (NBCC).
- One decision is to advance the ethanol blending target of 20 per cent in petrol to Ethanol Supply Year (ESY) 2025-26 from 2030.
- India took a cue from Indonesia and Brazil which have respectively increased the blending of bio-fuel by 30 per cent and 20 per cent to deal with burgeoning energy prices. In fact, ethanol is cheaper, costing merely around ₹65 per litre in comparison to petrol of around ₹96.
- The export ban is also aimed at enhancing the use of domestic sugar molasses towards ethanol production. India has been offering subsidies on export of sugar as the Indian sweetner is priced-out in international markets, thus costing the exchequer.

WTO pressure:

- Moreover, India has lost a sugar subsidy dispute against Brazil, Australia and Guatemala in the WTO. The WTO has advised India to withdraw its sugar

subsidies as they are not consistent with the WTO Agreement on Agriculture and the Agreement on Subsidies and Countervailing Measures.

Reduce burden of crude oil imports:

- Recognising these challenges, utilising sugar for ethanol will serve two purposes; first, reducing the burden of ever-increasing crude oil imports at high prices coupled with reducing the burden of export subsidy and potential trade dispute(s) at the WTO.
- There is logic in enhanced production of ethanol as it supports farm income, offers cheaper fuel solution, lower dependency on fossil fuels, and reduces pollution as ethanol is non-toxic and biodegradable.
- Further, it will develop an eco-system of enhanced production of bio-fuels thus supporting the farm income, a sector which is widely distressed.

Enhance domestic supplies and reduce inflationary pressures:

- Secondly, the argument that export curbs will enhance domestic supplies and cool inflationary pressures has limited merit as the country's sugar output is expected to touch a record 35.5 mt.
- Further, it is reported to be holding stocks of 6-7 mt from the previous marketing year. India's sugar industry is upbeat on a bumper production with Skymet and IMD predicting a normal monsoon.
- The data of sugarcane sowing from all prime producing States Uttar Pradesh, Maharashtra, and Karnataka vindicates the satisfactory trends, supported by both manual feeding of sowing data and validated by Global Positioning System.

Economic disruptions due to pandemic:

- Thirdly, the export restriction is motivated by external developments such as lower sowing of sugarcane in Brazil due to Covid-19 protocols and associated labour shortages along with harsh weather conditions.
- So the reduced exports from Brazil has increased the demand for Indian sugar in the world market. So, to safeguard domestic availability of sugar the government has opted to limit exports.
- Fourthly, the world economy is passing through a difficult phase with a series of economic disruptions, starting from the Covid-19 pandemic, container shortages, escalating freight charges, economic and trade sanctions, financial and commercial boycotts, and supply chain disruptions caused by the Russia-Ukraine war.
- All these developments have led to rising food protectionism around the world, as major producers curb agricultural exports, adding to the supply shock and enhanced price volatility in the international market.
- Finally, in the current geopolitical scenario, there is a view to move with caution as these commodities (wheat/sugar) can provide us a diplomatic leeway to

serve the humanitarian needs of countries that may have to endure extreme supply-shocks.

Way Forward:

➲ Needless to reiterate, it is an export restriction not a ban, meaning India will continue to cater to genuine requests of supply of sugar up to the prescribed export limit of 10 mt.

➲ It is a good move to leverage the diplomatic value in the global sugar trade scenario by restricting its supply but India must recognise that its ambition to evolve as a regional power can only be fulfilled if it emerges as a key supplier to the global economy.

GST COUNCIL MUST UPHOLD FISCAL FEDERALISM

Why in news?

➲ The recent ruling of the Supreme Court on the nature of recommendations made by the GST Council has attracted widespread comments because of the important observations made on Indian federalism, especially on it being a dialogue between cooperative and uncooperative federalism.

➲ The states, the court held, were free to use means of persuasion ranging from collaboration to contestation.

What was the case before the Supreme Court?

➲ The Gujarat High Court had quashed the two notifications that levied IGST (Integrated GST) on the ocean freight component in a CIF (cost, insurance and freight) contract. Briefly, the High Court held that these notifications were unconstitutional and amounted to double taxation.

➲ The Supreme Court, in appeal, had to merely consider the correctness of this judgment. The constitutional status of the GST Council and issues relating to fiscal, collaborative, and cooperative federalism were never raised before the high court.

➲ However, before the Supreme Court, the Union of India made far-reaching submissions that led to this landmark ruling on federalism in general, and fiscal federalism in particular.

GST Council as decision-making body for framing GST laws:

➲ Article 246A confers simultaneous or concurrent powers on Parliament and the state legislatures to make laws relating to GST. This article is in sharp contrast to the constitutional scheme that prevailed till 2017.

➲ It clearly demarcated taxing powers between the Centre and states with no overlaps. After 2017, several central and state levies were subsumed into GST. Each state was to have its own GST Act, all of them being almost identical to the Central GST Act. Inter-state supplies and imported goods are liable to IGST.

➲ Under Article 279A, the GST Council has to make "recommendations" on various topics including the tax rate and exemptions.

Centre's argument:

➲ The Union of India argued that the "constitutional architecture" showed that Articles 246A and 279A, when read together, made the GST Council the ultimate policy-making and decision-making body for framing GST laws.

➲ The GST Council was unique and incomparable to any other constitutional body and its recommendations would override the legislative power of Parliament and state legislatures; neither of them could legislate on GST issues independent of the recommendations of the GST Council.

➲ On a combined reading of Article 279A, the provisions of the IGST and CGST Acts and the recommendations of the GST Council were transformed into legislation. In simple terms, a recommendation of the GST Council was law and binding on Parliament and state legislatures.

Judgement of Supreme Court on powers of GST Council:

➲ The Supreme Court ruled that a draft Article 279B, which provided for a GST Disputes Settlement Authority, was omitted because it would have effectively overridden the sovereignty of Parliament and the state legislatures, and diminished the fiscal autonomy of the states.

➲ Democracy and federalism are interdependent for their survival. If the states had been conferred less power, they could still resist the mandate of the Union by using different forms of political contestation as permitted by constitutional design. Such contestation is valuable as part of "uncooperative federalism".

➲ Putting to rest any controversy, the court held that the recommendations of the GST Council had only a persuasive value. To regard them as binding edicts would disrupt fiscal federalism because both the Union and states were conferred equal power to legislate on GST.

Voting in GST Council:

➲ The GST Council has the Union finance minister as the chairperson and the Union minister of state in charge of revenue or finance as a member.

➲ While these two ministers from the Centre have one-third voting power, 31 states (including two Union Territories) share the remaining two-thirds of the vote. Thus, the GST Council has a total of 33 members. Out of a total of 33 votes, 11 belong to the Centre and 22 votes are shared by 31 states/UT, with each state/UT having a 0.709 vote.

➲ Any decision of the GST Council requires a three-fourth majority or a minimum of 25 votes. As the Centre has 11 votes, it requires an additional 14 votes. As each state has a 0.709 vote, at least 20 states must also vote with the Centre in favour of the resolution. Now, each state has one vote regardless of its size.

➲ Unlike so many statutes, Article 279A has made no provision to make the decision of the majority binding on the dissenting states.

Why this voting pattern was adopted for GST Council?

➲ Paragraph 2.73 of the Select Committee Report on the 122nd Constitution (Amendment) Bill, 2014, noted that this voting pattern was to maintain a fine balance as, in a federal constitution, the dominance of one over the other was to be disallowed.

➲ But the Supreme Court rightly noted that several sections in the state GST laws, CGST and in IGST, cast a duty even on dissenting states to issue notifications to implement the recommendations of the GST Council.

➲ Thus, the Court held that the state governments and Parliament, while exercising their rule-making powers under the provisions of the State GST Acts, CGST & IGST Acts, are bound by the recommendations of the GST Council.

➲ But even this did not mean that all recommendations of the GST Council are binding on state legislatures or Parliament to enact primary pieces of legislation on GST. In effect, states can amend their GST laws if they so choose.

Way Forward:

➲ In the end, the attempt of the Union of India to make the GST Council's recommendations have an overarching and binding effect was unsuccessful. But the Supreme Court's decision ought to be a wake-up call and deserves careful consideration.

➲ The GST Council is founded on the bedrock of collaborative federalism. If the GST Council meets periodically as mandated and there is active participation of the states in making recommendations, no state will oppose a recommendation that has been carefully deliberated and is in the national interest.

➲ Indeed, there is little chance of cracks developing in the GST edifice as long as the spirit of cooperative and collaborative federalism prevails.

IN A FIRST, IIM-AHMEDABAD BRINGS OUT AGRICULTURE LAND PRICE INDEX

Why in news?

➲ In a unique initiative, IIM-Ahmedabad (IIM-A) has joined hands with an e-marketplace for agricultural land, SFarms India, to develop a farm land price index based on the sales and purchases done on the platform.

➲ The index has been designed to record and present the "quality-controlled" data on prices of agricultural land in the country.

About SFarms India:

➲ SFarms India is an agricultural-land discovery platform, having more than 25,000 registered buyers and sellers.

➲ The platform has over 7,000 land listings, which are growing at around 15 per cent a month.

Salient features of the index:

➲ The Misra Centre for Financial Markets and Economy at IIM-A, under which this index is being launched, will host this on its official website and it will be called IIM-Ahmedabad SFarmsIndia Land Price Index (ISALPI).

➲ The index will track the price movements in the marketplace (SfarmsIndia) and come up with a composite pricing mechanism on a monthly basis, which will be updated twice a year.

➲ The index will not have any correlation with circle rates but will use the prices quoted in the online market place as their base value for research.

WHO STANDS WHERE

Ranking of states in comparative farmland prices

	Karnataka	Andhra Pradesh	Uttar Pradesh	Telangana	Maharashtra	Tamil Nadu
2019	1	2	3	4	5	6
2020	1	2	3	4	5	6
2021	1	2	3	4	5	6
2019–21	1	2	3	5	4	6

Source: ISALPI

Pilot basis:

➲ Given the complexity of developing an index for land parcels due to price differences, the index has been prepared to address the disparities and ensure accuracy.

➲ While ISALPI has started on a pilot basis in Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Telangana, and Uttar Pradesh, more data from other states of India is awaited.

➲ With more data, the index is expected to offer a superior representation of the national context and a more granular index at regional levels. In addition, the index will benefit stakeholders across the

spectrum including policymakers, local governments, environmentalists, investors, real estate developers, and financiers.

Way Forward:

- The index will be a reliable source in benchmarking land prices in rural and semi-urban areas and help in signalling converting agricultural land into real estate.
- The index can be used by local governments to compensate people who lose land for highway expansion.

WHY ARE FPIS DUMPING INDIAN STOCKS?

Why in news?

- Foreign portfolio investors (FPIs) have made record exits from the Indian capital markets.
- May figures of about ₹44,000 crore formed the highest monthly quantum of sell-off since March 2020 when India announced a nationwide lockdown.
- Their selling actions have triggered a significant decline in benchmark indices resulting in a drop in market capitalisation of companies.

What are FPIs?

- Foreign portfolio investors are those that invest funds in markets outside of their home turf. Their investments typically include equities, bonds and mutual funds.
- They are generally not active shareholders and do not exert any control over the companies whose shares they hold.
- The passive nature of their investment also allows them to enter or exit a stock at will and with ease.

What factors spur FPI moves?

- Promise of attractive returns on the back of economic growth draws investors including FPIs into a country's markets.
- For example, as per data from the National Securities Depositories Ltd. (NDSL), FPIs brought in about ₹3,682 crore in 2002. This grew to ₹1.79 lakh crore crore in 2010. This correlates with the concurrent expansion of economic output in that period, despite the 2008 global financial crisis which saw FPI sell-offs in that time-frame in the country. The year 2017 saw FPI inflows exceed ₹2 lakh crore.

- Likewise, FPIs withdrew ₹1.18 lakh crore in March 2020 alone, the month when India announced a nationwide lockdown, triggering concerns around economic growth. In tandem, benchmark stock index Sensex fell from 42,270 in February 2020 to 25,630 in March 2020.
- FPIs also show keenness to invest in bonds when there is a favourable differential between the real interest rates on offer in the country they aim to invest in, and other markets, but more specifically, compared with the largest economy in the world, the U.S.

Why have FPIs been selling India holdings?

- FPIs sold assets worth ₹44,000 crore in May 2022. This is the second highest sell-off in a month since 1993, after March 2020.
- Post-pandemic, recovery in the Indian economy has been uneven. The second wave of the COVID-19 pandemic in 2021 devastated lives and livelihoods. The economy stuttered again when a third, albeit less severe, wave saw the spread of the Omicron variant early in 2022.
- Add to this the return of pent-up demand in economies worldwide as the pandemic subsided. The pace of recovery caught suppliers off guard, contributing to supply-side shortages.

Impact of Russia-Ukraine War:

- Even as industry was grappling with this challenge, Russia launched an attack on Ukraine. Sunflower oil and wheat supplies from these two nations were impacted, leading to a rise in global prices for these crops.
- As supplies in general tightened across the globe, commodity prices too rose and overall inflation accelerated. India witnessed a quickening pace in price rise that stayed above the Reserve Bank's upper comfort level of 6% for four months running, touching 7.8% in April.
- Industrial production too has seen a bumpy ride without giving confidence of a full and final recovery from the pandemic. Consumption expenditure too has remained weak in the subcontinent.
- With each of these factors contributing to a decline in confidence of robust economic performance, foreign portfolio investors have been reducing market investments over these past months.

Hike by U.S. Federal Reserve:

- Add to the mix the U.S. Federal Reserve raising the benchmark interest rate starting March 2022. The key rate went up from 0-0.25% in March to 0.75-1% in May and is expected to rise by 50 basis points at each of the next two Fed meetings.
- When the differential between the interest rates in the U.S. and other markets narrows, and if such an occurrence is accompanied by the strengthening

of the dollar, then the ability of investors to realise healthy returns is impacted. For, returns are measured not only by the value appreciation of assets but also by exchange rate changes.

⮑ If the dollar strengthens against the rupee, then an investor is able to realise fewer dollars for a given quantum of rupee assets liquidated. Further, if inflation quickens in the overseas market where the investor has placed funds, then the real returns are even further impacted.

⮑ They then tend to exit assets seen as 'risky' such as in emerging markets like India, Brazil or South Africa.

What impact does an FPI sell-off have?

⮑ When FPIs sell their holdings, and repatriate funds back to their home markets, the local currency takes a beating. After all, they sell rupees in exchange for their home market currency.

⮑ As supply of the rupee in the market rises, its value declines. In this instance, the rupee has recently been seeing all-time lows.

⮑ About a year ago, it was trading in the region of 73 to a U.S. dollar; it is now flirting with the 78 level. With a weaker rupee, people have to shell out more funds to import the same unit of goods. The most telling impact is on the cost of crude oil imports that contribute to 85% of India's oil needs.

HOW ARE FEARS OF STAGFLATION IMPACTING MARKETS?

Why in news?

⮑ Globally Central bankers, are trying to formulate the appropriate set of policies to ensure that inflation, currently running at multi-decade highs in some advanced economies including the U.S., is cooled without triggering a recession.

⮑ It is predicted that stagflation is engulfing the nations.

How health of an economy is assessed?

Most economists typically focus on the three key macroeconomic gauges to assess the health of an economy:

a) Economic output measured by gross domestic product,

b) the level of unemployment and

c) inflation or the pace at which the prices of goods and services are rising in the economy.

⮑ The challenge for policymakers, especially central banks, is to ensure optimum conditions whereby output grows at a healthy pace, helping businesses in the economy to create jobs at a steady pace and thus keeping unemployment low, and most crucially having all of this happen in an atmosphere when prices remain relatively stable.

What exactly is stagflation?

⮑ In the real world, more often than not, high economic growth invariably spurs faster inflation which is

why many central banks have a specific mandate of ensuring that the pace of price gains does not exceed a specified target level or range.

⮑ The most difficult and messy problem for policymakers is when inflation runs high even as economic output either stagnates or, worse, shrinks.

⮑ The slowdown in economic activity, in turn, leads businesses to shed jobs and the resultant situation is termed as 'stagflation'.

How does it manifest?

⮑ One of the classic instances when most economies including the U.S. faced 'stagflation' was during the 'oil shock' of the early 1970s when an embargo led by the oil producers' cartel OPEC caused the price of crude to almost quadruple in a period of just under six months.

⮑ Countries like the U.S. that imported a lot of oil experienced both high inflation and recession. The Consumer Price Index exceeded 10% for the first time since the 1940s, unemployment jumped from 4.6% in 1973 to 9% in 1975, and the GDP plunged.

What has sparked the latest concerns about stagflation?

⮑ While the outbreak of the COVID-19 pandemic and the curbs imposed to contain the spread of the virus caused the first major recent economic slowdown worldwide, the subsequent fiscal and monetary measures taken to address the downturn, including substantial increases in liquidity in most of the advanced economies, fuelled a sharp upsurge in inflation.

⮑ While the Fed and the Bank of England are among central banks that have started raising interest rates to cool soaring prices, the ongoing war in Ukraine following Russia's invasion of its southern neighbour and the consequent Western sanctions on Moscow have caused a fresh and as yet hard-to-quantify 'supply shock'.

⮑ With the prices of commodities ranging from oil and gas to foodgrains, edible oils and fertilizers all surging sharply in the wake of the conflict, authorities face an uphill battle to contain inflation that is now less a function of demand (and so can be controlled by regulating credit) and almost entirely caused by supply factors that are far harder to manage.

⮑ To add to the concerns, several business leaders including Tesla's Elon Musk and JP Morgan Chase & Co.'s Jamie Dimon are warning of an impending 'recession'.

Steps to avert stagflation:

⮑ Take advantage of the current strong job market:Even if the economic growth slows, businesses would still have a demand for workers. Take advantage of that by negotiating a raise or looking for a new position. Data suggests that job switchers see bigger pay gains.

➲ Create and follow a budget:High inflation could make it crucial to evaluate where your money is going each month. Managing your finances, track spending and then compare that with where prices are rising the most. Strictly sticking to a budget could help you avoid purchasing items that are inflated and free up crucial amounts of cash.

➲ Plan for emergencies ahead:Use some freed-up cash to start a new emergency fund or keep adding it to an existing one. Experts recommend that building up at least six months of your expenses in cash can act as a cushion for a period of joblessness.

➲ Think about your bear-market strategy:No investor likes to take losses, especially if that money is going toward, one's retirement or a long-term goal. However, in times of severe market volatility, avoiding overreactions is important. Avoid selling off and diversify your investments.

Take advantage of the current strong job market

Plan for emergencies ahead

Steps to avert stagflation

Create and follow a budget

Think about your bear-market strategy
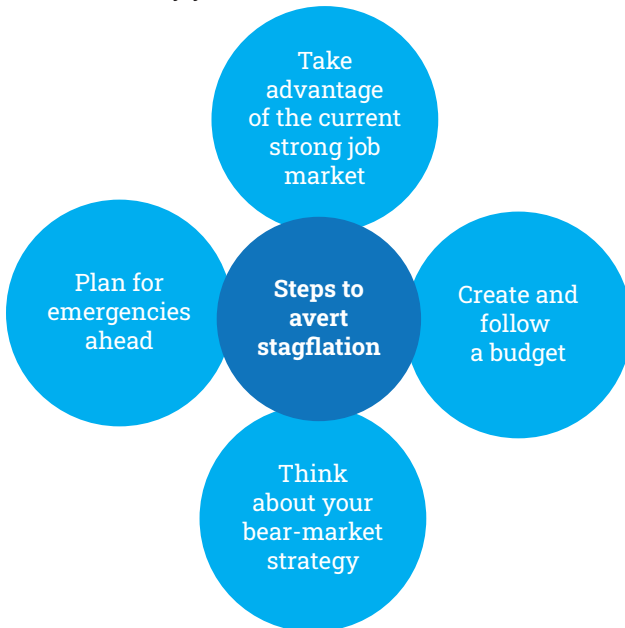
OF WHAT GOOD IS A BAD BANK?

Why in news?

➲ Recently, Finance Minister announced that the National Asset Reconstruction Company (NARCL) along with the India Debt Resolution Company (IDRCL)will take over the first set of bad loans from banks and try to resolve them.

Background:

➲ While the problem of bad loans has been a perennial one in the Indian banking sector, the decision to set up a bad bank was taken by the Union government during the Budget presented in 2021 in the aftermath of the nationwide lockdowns, and the moratorium was subsequently extended to borrowers by the Reserve Bank of India (RBI).

➲ The health of the balance sheets of Indian banks has improved significantly over the last few years with their gross non-performing assets (GNPA) ratio declining from a peak of 11.2% in FY18 to 6.9% in Q2FY22.

What is a 'Bad Bank'?

➲ A bad bank is a financial entity set up to buy non-performing assets (NPAs), or bad loans, from banks

➲ The aim of setting up a bad bank is to help ease the burden on banks by taking bad loans off their balance sheets and get them to lend again to customers without constraints.

➲ After the purchase of a bad loan from a bank, the bad bank may later try to restructure and sell the NPA to investors who might be interested in purchasing it.

➲ A bad bank makes a profit in its operations if it manages to sell the loan at a price higher than what it paid to acquire the loan from a commercial bank.

➲ Generating profits is usually not the primary purpose of a bad bank, the objective is to ease the burden on banks, of holding a large pile of stressed assets, and to get them to lend more actively.

What are the pros and cons of setting up a bad bank?

➲ A supposed advantage in setting up a bad bank, it is argued, is that it can help consolidate all bad loans of banks under a single exclusive entity. The idea of a bad bank has been tried out in countries such as the U.S., Germany, Japan and others in the past.

➲ The troubled asset relief program, also known as TARP, implemented by the U.S. Treasury in the aftermath of the 2008 financial crisis, was modelled around the idea of a bad bank.

➲ Under the program, the U.S. Treasury bought troubled assets such as mortgage-backed securities from U.S. banks at the peak of the crisis and later resold it when market conditions improved. It is estimated that the Treasury through its operations earned a nominal profit of anything between $11 billion to $30 billion, although some contest these figures.

Criticism:

➲ Many critics, however, have pointed to several problems with the idea of a bad bank to deal with bad loans.

➲ Former RBI governor RaghuramRajan has been one of the fiercest critics of the idea, arguing that a bad bank backed by the government will merely shift bad assets from the hands of public sector banks, which are owned by the government, to the hands of a bad bank, which is again owned by the government.

➲ There is little reason to believe that a mere transfer of assets from one pocket of the government to another will lead to a successful resolution of these bad debts when the set of incentives facing these entities is essentially the same.

Other analysts believe that unlike a bad bank set up by the private sector, a bad bank backed by the government is likely to pay too much for stressed assets. While this may be good news for public sector banks, which have been reluctant to incur losses by selling off their bad loans at cheap prices, it is bad news for taxpayers who will once again have to foot the bill for bailing out troubled banks.

Will a 'bad bank' help ease the bad loan crisis?

A key reason behind the bad loan crisis in public sector banks is the nature of their ownership.

Unlike private banks, which are owned by individuals who have strong financial incentives to manage them well, public sector banks are managed by bureaucrats who may often not have the same commitment to ensuring these lenders' profitability. To that extent, bailing out banks through a bad bank does not really address the root problem of the bad loan crisis.

Further, there is a huge risk of moral hazard. Commercial banks that are bailed out by a bad bank are likely to have little reason to mend their ways. After all, the safety net provided by a bad bank gives these banks more reason to lend recklessly and thus further exacerbate the bad loan crisis.

Will it help revive credit flow in the economy?

Some experts believe that by taking bad loans off the books of troubled banks, a bad bank can help free capital of over ₹5 lakh crore that is locked in by banks as provisions against these bad loans.

This, they say, will give banks the freedom to use the freed-up capital to extend more loans to their customers. This gives the impression that banks have unused funds lying in their balance sheets that they could use if only they could get rid of their bad loans.

It is, however, important not to mistake banks' reserve requirements for their capital position. This is because what may be stopping banks from lending more aggressively may not be the lack of sufficient reserves which banks need to maintain against their loans.

Instead, it may simply be the precarious capital position that many public sector banks find themselves in at the moment. In fact, many public sector banks may be considered to be technically insolvent, as an accurate recognition of the true scale of their bad loans would show their liabilities to be far exceeding their assets.

Conclusion:

A bad bank, in reality, could help improve bank lending not by shoring up bank reserves but by improving banks' capital buffers.

To the extent that a new bad bank set up by the government can improve banks' capital buffers by freeing up capital, it could help banks feel more confident to start lending again.

RBI RAISES RATES TO TAME INFLATION

Why in news?

Recently, the Reserve Bank of India's Monetary Policy Committee (MPC) voted unanimously to raise the repo rate in a bid to slow inflation.

RBI MPC OUTCOME: INFLATION PEGGED AT 6.7%
Here's how inflation figures will look like across quarters

INFLATION ACROSS QUARTERS

Q1	Q2	Q3	Q4
7.5%	7.4%	6.2%	5.8%

Key Highlights:

The central bank hiked repo rate by 50 basis points (bps) to 4.90 per cent since inflation is above the central bank's upper tolerance limit.

The standing deposit facility (SDF) rate and marginal standing facility rate (MSFR) stood at 4.65 per cent and 5.15 per cent respectively.

India's real GDP growth is pegged at 7.2 per cent for 2021-22 and inflation forecast for 2022-23 stands at 6.7 per cent.

How hike in policy rate will help?

Repo is the rate at which banks take loans from RBI to meet their immediate needs. The change in this rate has a direct effect on retail loans, increasing the repo rate means that banks will get loans from RBI at a higher rate.

This will increase the EMI of other loans like home loan, car loan and personal loan etc., because banks will pass on the increased repo rate directly to the customers.

This decision is being considered positive from an economic point of view. The objective is to spur economic growth while keeping high inflationary pressures under control, yet it will be helpful to some extent in moderating inflation which has remained above the target of 6 percent for the last five months.

Also positive for Bank, NBFC deposits and Fixed income investors will get benefit from returns on savings products such as small savings schemes.

How does it work?

The prices are determined by the supply and the demand for goods and services in an economy. As such, the price rise in any given situation may be caused by either an increase in demand or lack of supply or both.

Now, the RBI MPC has only monetary tools which arrest demand by making money more expensive

or by reducing its supply. Typically, it raises the repo rate, which is the interest rate at which RBI lends overnight money to commercial banks against government securities.

➲ This transmits into an increase in interest rates, both lending and deposit depending on the given situation, of lenders though with a lag.

➲ RBI also has other monetary instruments in its hands such as cash reserve ratio (CRR) which is a portion of a commercial bank's total deposits that needs to be maintained with the RBI.

➲ In the off-cycle decision, the MPC had raised the repo rate by forty basis points and CRR by 50 in May. Both these measures, as cited above, reduce demand in the economy.

So, a repo rate and CRR hike ought to help tame inflation?

➲ It depends on certain situations. Inflation is not affected by money supply alone. The current high inflation has more to do with disruption of supply, caused by the ongoing Russia-Ukraine war which has raised commodity prices such as that of crude oil, fertiliser.

➲ This in turn has an impact on food inflation. Besides, it has reduced the supply of sunflower oil as Ukraine was the world's biggest exporter before the war.

➲ There are seasonal factors too which have raised inflation in lemons, tomatoes, and wheat. MPC's monetary tools cannot tame this kind of inflation. However, part of inflation is also due to some revival of demand in the economy as it gradually recovers.

➲ Monetary policy reduces this demand which will negatively impact economic growth. Monetary tools also prevent inflation from entering other areas such as from food to wages to rent etc. In other words, it reduces inflationary expectations in the economy.

What needs to be done?

➲ Oil is the biggest reason for inflation, recently the government has reduced oil prices but it should be reduced further. The tax revenue collection of the government at this time is good.

➲ In March, the government got revenue of Rs 1 lakh 42 thousand 95 crore. This is the highest in the last five years, in addition, there is a need for rationalization of GST in some categories. On the other hand, if the government wants to increase tax revenue, it can increase taxes like corporate tax, property tax.

➲ Food prices should fall, the focus should be on increasing the supply of agricultural commodities. The prices of the products of the FMCG sector have increased rapidly, affecting thousands of shopkeepers as well as millions of customers.

Strong manufacturing &agriculture sector:

➲ Now that the rupee continues to depreciate against the US dollar, India's economy needs a strong manufacturing and agriculture sector as the country's major services sector is struggling and yet to return to normalcy after two deadly waves of the Covid-19 pandemic.

➲ Any sustainable inflation control requires a focus on production. India may in future make itself the next 'global manufacturing hub' which is anyway fed up with China and is looking for alternative manufacturing hubs. There is a need to free the manufacturing sector from cumbersome rules.

➲ Inflation is at its peak and it doesn't seem to be ending yet. If the government and the central bank fail to control inflation, there will be a possibility of the economy becoming unstable.

GOVT TARGETS TO ENHANCE COAL PRODUCTION TO 140 MT BY 2029-30

Why in news?

➲ The Ministry of Coal released an action plan for 2022-23.

➲ Under the Coking Coal Mission the government has set a target to enhance the annual coking coal production from 45 million tonnes (MT) in 2020-21 to 140 MT by 2029-30.

Focus areas:

➲ The Ministry of Coal said it has finalised an Action Plan Document for the year 2022-23 which broadly focuses on 15 crucial areas.

➲ The focus areas include Grey Hydrogen; Just Transition/ Energy Transition; Restructuring Coal Mines Provident Fund Organisation. (CMPFO); Coal evacuation; Benchmarking of Machines & Quantifiable Parameters (Output per hr/per machine); Outsourcing of Coal India Ltd. (CIL) Mines; Coal Trading Platform; Regulatory Mechanism for coal; Training; Corporate Restructuring of Coal Sector (CPSEs); Quality Issues; Lignite Gasification; Coking Coal Strategy; Coal Pricing Reforms and Futuristic Agenda.

Futuristic Agenda:

➲ The Futuristic Agenda includes- Coal to Chemical: Syn Gas, Hydrogen Gas, Liquid fuels, Chemicals and fertilizers, CIL – diversify its business and explore prospects in sunrise industries electric charging pods, EVs etc., acquisition and mergers of similar or new business after due diligence, media campaigns and close monitoring of CSR activities.

India's overdependence on coal for power generation

➲ India's overdependence on coal for power generation was laid bare during the electricity crisis in April, when several states reported outages triggered by dwindling stocks of this fossil fuel amid the early onset of summer.

➲ Coal fulfils 55 per cent of the country's energy needs; phasing it out and switching over to clean energy are huge challenges.

⮫ With the power demand remaining high, state-owned Coal India Limited (CIL) has floated its maiden tender to import 2.4 million tonnes (MT) of coal in an effort to ensure adequate supply to power plants across the country.

Switch to renewables:

⮫ India has set itself stiff targets of sourcing 50 per cent energy requirement from renewables and installing 500 GW of non-fossil fuel electricity capacity by 2030.

⮫ With coal here to stay, despite being a major source of air pollution, the push for renewable energy must be tempered by ground reality.

⮫ The Commission for Air Quality Management's order banning the use of coal for industrial and domestic applications in the NCR from 2022can make a visible difference only if viable alternatives are made available to the consumers.

Background:

⮫ This is for the second time that an Agenda document for the year has been brought out in the form of a compilation and provided to all senior functionaries who have been apportioned the responsibility of steering these focus areas through the year with regular monitoring and appraisals.

⮫ The areas covered step up the major reforms done in the last few years and also give direction for covering and meeting the existing and the emerging challenges of the Coal Sector and aligns itself well with the emerging technologies and diversification thrust of the Coal Sector.

Significance:

⮫ The Action Plan covers the entire gamut of areas for steering the coal sector into new technologies while focussing on the core competence of increasing production targets.

⮫ Coking Coal Mission had been launched by the Ministry for enhancement of coking coal production from 45 Million Ton in 2020-21 to 140 MT by 2029-30 which includes 105 MT from Coal India Limited.

SEBI'S CONCERNS AROUND CRYPTO ASSETS

Why in news?

⮫ The Securities and Exchange Board of India (SEBI), which regulates the securities and commodities market, has reportedly told the Parliamentary Standing Committee on Finance led by Jayant Sinha that regulation of crypto assets would be difficult given the nature of technology that sustains them.

⮫ It was reported that the Reserve Bank of India had also shared its worries about cryptocurrencies with the committee.

What exactly did the SEBI tell the committee?

⮫ SEBI has essentially flagged the problems with regulating crypto assets because they "are maintained in decentralised distributed ledgers, which are nested in computer nodes spread all across the globe."

⮫ Crypto assets is usually used as an umbrella term to encompass cryptocurrencies (e.g., Bitcoin, Ether) as also non-currency tokens such as utility tokens (which provide a certain utility within an ecosystem) and non-fungible tokens (which help establish ownership of unique items), among others.

⮫ The underlying technology for crypto assets is the same, distributed ledgers that aren't controlled by any one entity.

What else did SEBI say?

⮫ SEBI has elaborated upon the possible need for different regulators to deal with different aspects of a crypto asset market. Crypto exchanges, for instance, represent one such aspect. These exchanges, in case of a cross-border transaction, in effect enable the use of a cryptocurrency as a bridge to convert one nation's official currency to another.

⮫ These exchanges could be brought under the regulatory purview of the RBI. The idea is to implement what are calledKYC/AML/CFT (Know Your Customer/ Anti-Money Laundering/Combating of Financing of Terrorism) norms. For some years now, the RBI has implemented a set of these guidelines in regulating banks so as to prevent them from being used by criminal elements.

⮫ The subscribers or customers of crypto assets form another important part of the market. SEBI has suggested that the Consumer Protection Act of 2019 be invoked to make sure their interests are safeguarded. It has also sought clarity on whether cryptocurrencies can be legally classified as securities. Right now, they aren't.

⮫ SEBI has said that crypto assets are not part of the definition of what constitutes as securities under the Securities Contracts (Regulation) Act of 1956, also known as SCRA. It is to be noted that what constitutes as securities under the SCRA is what is used under the SEBI Act.

Why is this important?

⮫ In December 2021, it was widely reported that the government was looking to get SEBI to regulate crypto assets by bringing in legislation around that time.

- Though such a legislation, the Cryptocurrency and Regulation of Official Digital Currency Bill, 202 did not materialise at that time, the talk that the government wants to treat cryptocurrencies as digital assets, rather than as currencies, has not ebbed.

Has SEBI also flagged issues about celebrity endorsements?

- Yes. It has proposed to the committee that celebrities should not be allowed to endorse cryptocurrencies.
- Given that crypto products are unregulated, prominent public figures including celebrities, sportsment, etc, or their voice shall not be used for endorsement/ advertisement of crypto products.
- It was also mentioned in that report that they must be held responsible for making any endorsement of crypto products.

What did the RBI tell the committee?

- The committee that cryptocurrencies can lead to "dollarisation" of a part of the economy. This was against India's sovereign interest.
- Almost all cryptocurrencies are dollar-denominated and issued by foreign private entities, it may eventually lead to dollarisation of a part of our economy which will be against the country's sovereign interest.
- They linked this to a possible undermining of RBI's ability to regulate money supply in the economy.

What has been the stance of the government?

- Over the last few years, the government's stance has definitely changed. But there is still ambiguity around what it really wants to do. A Bill that was sought to be introduced last year signalled its intention to ban cryptocurrencies outright. It, however, didn't see the light of day.
- The idea that the administration doesn't consider cryptocurrencies desirable has been made clear from time to time for some years now.
- It started as statements in the Budget but then an inter-ministerial report recommended an outright ban. Such currencies were and are considered problematic as they can easily evade official scrutiny, bypass and weaken the monetary system, and fuel illegal trade. Around this time, an RBI circular sought to bar banks from dealing in such currencies, only for the Supreme Court to strike it down.
- The cryptocurrency industry saw a window of hope earlier when Finance Minister imposed a tax for the first time on crypto assets. The tax, at 30%, was seen at first to settle the question of legality of such currencies. But, she indicated that taxability was an issue that is not to be linked to legitimacy.
- Legislative clarity is still awaited. Meanwhile, the Sinha-led committee has in recent months been holding extensive conversations with the financial regulators, who being statutory bodies.
- The committee also met with representatives of the crypto industry. The Bill aims to set up a facilitative framework for creation of the official digital currency to be issued by the RBI.

THE MOVE TO LINK CREDIT CARDS WITH UPI

Why in news?

- The Reserve Bank of India (RBI) has proposed to allow linking of credit cards with the Unified Payments Interface (UPI) platform. The move is part of the central bank's efforts to enhance the scope of UPI.
- The RuPay credit cards issued by the RBI-promoted National Payments Corporation of India (NPCI) will be enabled first, and will become available after system developments.
- The UPI, also managed by the NPCI, was first introduced in 2016.

What explains the effort to link credit cards with UPI?

- The UPI has, over time, become a popular mode of payment in India with more than 26 crore unique users and five crore merchants on the platform. In May 2022, about 594 crore transactions amounting to ₹10.4 lakh crore were processed through the interface.
- At present, the UPI facilitates transactions by linking savings/current accounts through users' debit cards.
- It is now proposed to allow linking of credit cards on the UPI platform. This is intended to provide additional convenience to users and enhance the scope of digital payments.

More On Board
Allowing credit card transactions through UPI is set to provide almost all the 250 million users of UPI access to such credit

UPI has over 250 million unique users and 50 million merchants onboarded

The platform processed almost 5.95 billion transactions worth ₹10.40 lakh cr in May

UPI-based payment through put more than doubled to ₹84.16 lakh cr in 2021-22

Overall credit outstanding against credit cards was near ₹1.5 lakh cr in April

When will the facility be made available?

- This facility would be available after the required system development is complete. The RBI will issue necessary instructions to NPCI separately to facilitate the change.
- To begin with, the indigenous RuPay credit cards would be linked to the UPI platform. It is likely to be followed by other card networks such as Visa and MasterCard that would bring in more users.

What is the benefit of this provision?

- The arrangement is expected to provide an additional avenue for payment to customers and hence enhance convenience.
- The linking of credit cards to UPI has been proposed to further deepen the reach and usage of credit cards.

Why do authorities expect this move to spur the use of credit cards?

‣ It is expected to bolster transactions and acceptance at more merchant sites. People who generally prefer to pay by credit card so as to avail of a longer pay-back period or loans on credit-card outstanding, or who do not wish to touch their savings at the moment of purchase, can pay using credit cards via UPI.

‣ Currently, many merchants do not have credit card point-of-sale (PoS) terminals especially in semi-urban and rural areas but a significant number do have the QR code-based UPI acceptance facility. Now, they too will be able to accept credit payments via UPI without needing a PoS device.

‣ Linking of credit cards with UPI is likely to increase the use of such cards in small-ticket-size payments, as it would provide users with more options to pay from. The move will provide a significant boost to overall spending via credit cardscurrently, spending through the use of credit cards is more than double the average spend via debit cards. More spending is generally a force multiplier for the economy.

‣ Besides accelerating digital transactions this measure is also expected to affect the average ticket size of financial transactions.

‣ Many people use credit cards for rewards and benefits and UPI for its convenience & security. The new provision of linking credit cards to UPI brings both these advantages together.

‣ Kirana stores where credit cards are not accepted would likely find it convenient to accept credit card payments through UPI.

Will a merchant discount rate be applicable for these payments?

‣ There is no word yet on the merchant discount rate (MDR) applicable on transactions using credit card numbers via UPI, other than for RuPay, which attracts no such charge. Today, since foreign card issuers such as Visa and MasterCard have a lion's share of the credit card network business, part of the fees goes to them.

‣ However, the Indian government has shown its intent to promote the indigenous RuPay card system. It remains to be seen if it indeed does turn out more economical for merchants to accept payments from users with credit cards from foreign issuers.

THE REASONS BEHIND THE CRASHING CRYPTO MARKET

Context:

‣ Bitcoin has lost more than two-thirds of its value since it hit a peak of around $69,000 in November 2021 and is currently trading at around the $22,000 mark. Ethereum, another cryptocurrency popular among investors, has lost almost 80% from its peak.

‣ As a result, the overall market capitalisation of cryptocurrencies has dropped under $1 trillion for the first time since January 2021.

‣ The crash, which shows no signs of reversal yet, seems to have led to a drop in investor enthusiasm with trading volumes in Indian cryptocurrency exchanges dropping by 90% from their peak.

Why are cryptocurrencies crashing?

a) The fall in the price of cryptocurrencies is in line with the fall in prices of stocks and other assets as central banks such as the U.S. Federal Reserve tighten monetary policy to fight price rise. As central banks withdraw liquidity from the market, there's less money chasing assets, which in turn causes the prices of assets to drop.

b) Others believe that the crash could also mark the popping of the bubble that has driven the prices of cryptocurrencies to stratospheric levels.

c) Sceptics have long argued that the price of cryptocurrencies seems driven more by speculative fervourfuelled by easy monetary policy than by any fundamental factors.

‣ For instance, the extreme volatility in the price of cryptocurrencies was seen by many as a feature that ruled out the use of cryptocurrencies as money. Such extreme volatility simply seemed to reflect investor behaviour that bordered on gambling.

‣ These sceptics also pointed to the fact that even though cryptocurrency prices were rising aggressively, the use of cryptocurrencies for real-life transactions was low.

‣ So, in essence, there was very little reason to believe that the rally in cryptocurrencies was driven by their wider acceptability as an alternative to fiat currencies.

How do governments view cryptocurrencies?

‣ Some sceptics have also argued that even though private cryptocurrencies can rise to the status of alternatives to fiat currencies over time, governments and central banks may not allow this to happen.

‣ Many countries have taken several steps to discourage the widespread use of cryptocurrencies. While countries such as China and Russia have opted to impose outright bans on cryptocurrencies, others such as India have tried to tax and regulate them heavily.

How wide acceptance of cryptocurrencies can affect money supply?

‣ In India, while the government has not imposed an outright ban on cryptocurrencies, the Reserve Bank of India has been quite vocal about the need to ban them completely. It is no surprise that central banks are wary of private cryptocurrencies since they challenge the monopoly that central banks currently enjoy over the money supply of an economy.

- If cryptocurrencies became widely acceptable, it would affect the control that central banks possess over the economy's money supply.
- It would also affect the ability of governments to fund their spending by creating fresh money as citizens could then opt to switch to alternative currencies.

Will cryptocurrencies rise again?

- Cryptocurrency enthusiasts argue that cryptocurrencies such as Bitcoin have always been subject to extreme price swings and that the current crash is a good time to buy these virtual currencies at a tremendous bargain.
- Many crypto-enthusiasts have been handsomely rewarded in the past when they bought cryptocurrencies during times of panic selling. They argue that cryptocurrencies, just like gold, protect investors against the risk of price inflation.
- Unlike fiat currencies issued by central banks, the supply of various cryptocurrencies is limited by design. By holding their wealth in cryptocurrencies that either maintain their value or even appreciate in value over time, investors can protect themselves against the debasement of their wealth by central banks.

No fundamental value:

- Even if cryptocurrencies manage to recover from the current crash, they may still not manage to hold on to their gains, because cryptocurrencies possess no fundamental value as money. In fact, some have argued that the real value of cryptocurrencies is somewhere close to zero.
- They point out that even the most popular cryptocurrencies such as Bitcoin are still not used very much in the daily purchase and sale of goods and services in the real economy.
- Crypto-enthusiasts argue that while cryptocurrencies may not be widely accepted as a currency, they still represent an independent asset class like gold that can help investors protect their wealth from central banks.
- This argument is still prone to the criticism that cryptocurrencies do not possess any independent value of their own to be compared to gold and silver, and thus cannot offer any wealth protection over the long-run.

Conclusion:

- Precious metals such as gold and silver are far more acceptable than cryptocurrencies, which is what gives them their intrinsic value. In fact, precious metals served as currencies for centuries and have been widely used for industrial and other purposes.
- No cryptocurrency has such a record. The fact that precious metals are limited in supply definitely helped boost their value. But limited supply alone cannot make cryptocurrencies like Bitcoin a valuable asset like gold and silver.

PAYMENTS VISION DOCUMENT 2025

Why in news?

- Recently, the Reserve Bank of India (RBI) has unveiled the Payments Vision 2025 document.
- It proposes a host of innovative payment systems and regulation of BigTechs, fintechs, buy-now-pay-later (BNPL) systems, and introduction of a central bank digital currency (CBDC), among others.

Key Highlights:

- It has proposed enabling of geotagging of digital payment infrastructure and transactions and revisiting guidelines for prepaid payment instruments (PPIs), including closed system PPIs.
- It also proposed a framework for regulation of all significant intermediaries in payments ecosystem and link credit cards and credit components of banking products to UPI.
- Other proposals include bringing in enhancements to Cheque Truncation System (CTS), including One Nation One Grid clearing and settlement perspective, and creating payment system for processing online merchant payments using internet and mobile banking.
- It also proposed regulation of BigTechs and FinTechs in the payments space.

Buy Now, Pay Later (BNPL) services:

- It took note of the proliferation of Buy Now, Pay Later (BNPL) services.
- The vision document recommended that the BNPL method should be examined, and issuance of

appropriate guidelines on payments involving BNPL should be explored.

- BNPL services have developed into a new payment mode alongside the existing payment modes like cards, UPI, and net banking.
- This channel, facilitated by a few payment aggregators, leverages the existing nodal account (escrow account after authorisation) to route payments between BNPL customer and a merchant.

Targets to be achieved:

- The number of digital payment transactions should treble by 2025 and the Unified Payments Interface (UPI) should register an average annualised growth of 50% by then.
- RBI expects the Immediate Payment Service (IMPS) and National Electronic Funds Transfer (NEFT) to grow at an annual average of 20%.
- A reduction in the volume of cheque-based payments to less than 0.25% of the total retail payments.
- The industry should target increasing its payment transaction turnover vis-à-vis gross domestic product (GDP) to eight and debit card transactions at point of sale (PoS) by 20%. Debit card usage is to surpass credit cards in terms of value while transactions through prepaid payment instrument (PPI) should rise 150%.
- It further says that card acceptance infrastructure is to increase to 25 million and the registered customer base for mobile-based transactions is to grow 50% on a compound annual growth rate (CAGR) while cash in circulation (CIC) as a percentage of GDP is to be reduced.

Alternate risk-based authentication mechanisms:

- Considering emerging concerns with OTP-based authentication in terms of increasing cases of divulgence of customers' confidential details, alternate risk-based authentication mechanisms leveraging behavioural biometrics, location, historical payments, digital tokens and in-app notifications shall be explored.
- The use of legal entity identifiers (LEI) in areas like sanctions screening, know your customer (KYC), corporate invoice reconciliation and fraud detection shall be explored.
- The possibility of interoperability for contactless transit card payments in the offline mode shall be explored to facilitate seamless travel with a single payment instrument usable across different transit operators. A more evolved system for monitoring and reporting of frauds will be worked on.

Way Forward:

- The Payments Vision 2025 has the core theme of E-payments for everyone, everywhere, everytime (4Es) and aims to provide every user with safe, secure, fast, convenient, accessible and affordable e-payment options

ARE THE UNEMPLOYMENT NUMBERS RELIABLE?

Why in news?

- Recently, the National Statistical Office (NSO), which functions under the Union Ministry of Statistics and Programme Implementation, released the annual report on the basis of the Periodic Labour Force Survey (PLFS) conducted during July 2020-June 2021.

Key Highlights:

- Though conducted amid the first lockdown, the survey said unemployment rate saw a decrease from 4.8% in 2019-20 to 4.2% in 2020-21, meaning that 4.2% of adults who looked out for jobs could not get any work in rural and urban areas of the country in 2020-21.
- In rural areas, the rate is 3.3% while in urban areas the unemployment rate was recorded at 6.7%.
- This report, which also gave details of internal migration, said 11.8 people out of 100 samples migrated to other States during the period of survey.

What is the methodology of the PLFS?

- The fieldwork of PLFS was suspended twice during the survey in March 2020 and in April 2021 due to COVID-19.
- A rotational panel sampling design has been used in urban areas, which means each selected household in urban areas is visited four times. There was, however, no revisit in rural areas and the samples were drawn randomly in the form of two independent sub-samples.
- The PLFS gives estimates of key employment and unemployment indicators like, the Labour Force Participation Rates (LFPR), Worker Population Ratio (WPR) and Unemployment Rate (UR)

Are there problem areas?

- Experts have raised questions over the approach and methodology of the PLFS.
- It is said that the PLFS or any such survey cannot produce decent data on migration. Only the 2021 Census, which has been delayed, is the correct method to find out the migration status of people.

➲ Another issue which is being flagged is that the PLFS cannot compare a normal year with an abnormal, pandemic-hit year.

➲ A second visit to the rural households could have provided a bigger and larger picture of unemployment that was not captured by the PLFS.

➲ By comparing the lower rate of economic growth during 2020-21 to the PLFS report on unemployment presents a contradiction as according to the Central Statistics Office, India's GDP growth fell over 7.3% during 2020-21.

Why does the data matter?

➲ Historically, data collated by the Indian government agencies were well accepted globally. Though, of late, several questions have been posed on the data released by the Centre and various State governments.

➲ The country needs reasonable good data for evidence-based policies to address issues such as unemployment and farmers' distress. Governments need data to understand economic and social behaviour of the people.

➲ For example, if the survey says unemployment has decreased, there are chances that the government systems become lethargic in addressing the situation. According to researchers, even empirically, the employment and the quality of employment have come down.

What happens next?

➲ The data is used basically for planning governmental intervention in various sectors such as agriculture, infrastructure, animal husbandry etc. For drafting any policy, data has to be used in a context. If the reality is not reflected in data, public may reject such data.

➲ In classical Keynesian terms, any rate of unemployment below 5% is not considered as unemployment.

➲ The report raised questions among experts and critics about its efficacy in formulating policies against unemployment and for creating quality employment.

AN OIL PALM PLAN FOR INDIA

Context:

➲ The recent World Trade Organisation's (WTO) 12th Ministerial Conference in Geneva, struggled to find satisfactory answers to some of the complex questions pertaining to global trade.

➲ These questions relate to waiving the Trade-Related Aspects of Intellectual Property Rights (TRIPS) regime on vaccines during public health emergencies such as the Covid pandemic, loosening the rules on public stockholding for food security purposes, reducing/ eliminating subsidies on fisheries, resolving contentious issues in e-commerce and reforming the WTO.

➲ The ministerial conference is the top decision-making body of the agency whose basic goal is to ensure that trade flows as smoothly, predictably and freely as possible, based on some agreed-upon rules.

Inward-looking approach:

➲ As far as agriculture, trade and food security are concerned, the challenge is to figure out the most appropriate trading rules in dire situations like pandemics, wars, social/political disruptions or natural disasters.

➲ Many countries become inward-looking in such times and impose outright export bans citing domestic food security needs.

➲ Recent examples include Russia's export ban on wheat and sunflower oil, Ukraine's ban on exports of food staples, Indonesia's ban on palm oil exports, Argentina's ban on beef exports, Turkey, Kyrgyzstan and Kazakhstan's ban on a variety of grain products, and India's wheat export ban.

➲ Sudden actions such as these exacerbate the pressure on global trade leading to a spike in the prices of these commodities, threatening the food security of net food-importing countries.

"Self-sufficiency" & "Self-reliance":

➲ Supply disruptions during the pandemic and the Russia-Ukraine war have led many nations to think about "self-sufficiency" in critical food items or at least reduce their "excessive dependence" on imports of essential food products. India is no exception.

➲ India's edible oil import bill in 2021-22 (FY22) crossed $19 billion (for more than 14 MMT of imports). India imports 55 to 60 per cent of its edible oil requirements. This is considered "very excessive" and efforts are on to reduce this dependence.

➲ It would be interesting to keep in mind that "self-sufficiency" and "self-reliance" are two different concepts with very different policy implications.

➲ While "self-sufficiency" would imply replacing all imports of a commodity (say edible oils in India's case) at any cost (thus raising import duties exorbitantly), "self-reliance" would continue to embed the principle of "comparative advantage" in the endeavour to reduce dependence on imports.

India's agri-exports & imports in FY22:

- The country's agri-exports in FY22 touched $ 50.3 billion against its agri-imports of $ 32.4 billion. This means that Indian agriculture is largely globally competitive.
- But its biggest agri-import item, edible oil, accounts for 59 per cent of India's agri-import basket. This is despite the quite high import duties that have generally been imposed on edible oil imports.
- Palm oil comprises more than 50 per cent of India's edible oil imports, followed by soybean and sunflower.
- Edible oil imports are followed by fresh fruits and vegetables (F&V), pulses, spices and cashew among others.

National Edible Oil Mission-Oil Palm (NEOM-OP):

- The "excessive dependence" on imports has raised the pitch for "atmanirbharta" in edible oil. The Prime Minister launched the National Edible Oil Mission-Oil Palm (NEOM-OP) in 2021.
- Indian policymakers are aware that achieving atmanirbharta in edible oils through traditional oilseeds such as mustard, groundnuts and soya would require an additional area of about 39 million hectares under oilseeds.
- Such a large tract of land will not be available without cutting down the area under key staples (cereals) – this could endanger the country's food security even more.

Need for enhancing palm oil cultivation:

- Arational policy option to reduce import dependence in edible oils is to develop oil palm at home and ensure that it gives productivity comparable to that in Indonesia and Malaysia, about four tonnes of oil per hectare, which is more than 10 times mustard can give at existing yields.
- India has identified 2.8 million hectares of area where oil palm can be grown suitably. So far the objective of NEOM-OP is to bring in at least 1 million hectare under oil palm by 2025-26.
- Given the way international prices of edible oils have surged in the last year or so (by more than 70 per cent), it may be time for India to ramp up its efforts in developing oil palm.

Challenges & Roadmap:

- The problem with oil palm is that it is a long gestation period crop. It takes four to six years to come to maturity; during this period, smallholders need to be fully supported.
- The support (subsidy) could be the opportunity cost of their lands, say profits from paddy cultivation, which is largely the crop oil palm will replace in coastal and upland areas of Andhra, Telangana and Northeast India.
- Further, the pricing formula of fresh fruit bunches (FFB) for farmers has to be dovetailed with a likely

long-run average landed price of crude palm oil with due flexibility in the import duty structure.
- One needs to identify trigger points when import duties need to be raised as global prices come down, and when to reduce these duties in case of rising global prices.
- Besides this, the processing industry needs to ensure an oil recovery of at least 18 to 20 per cent – that must be built into the pricing formula.
- The other option is to declare oil palm as a plantation crop and allow the corporate players to own/lease land on a long-term basis to develop their own plantations and processing units. This does not seem plausible in the current socio-political context.

Way Forward:

- Overall, unless India thinks holistically and adopts a long-term vision, the chances of reducing India's imports of edible oils from 14MMT in FY22 to 7MMT by FY27 look bleak.

HUB AIRPORT FLIGHT PATH IN INDIA

Context:

- Transforming one of India's metro gateway airports into a hub airport deserves consideration as the aviation market puts the novel coronavirus pandemic behind it and passenger demand surges.
- Today, India is the third largest domestic aviation market in the world, next only to the United States and China. Consumer confidence in air travel has helped the industry recover faster than anticipated. Some airports have already breached or are close to matching the traffic demand seen before the pandemic.
- Besides, in view of the surge in passenger demand, India's airport operators have planned investments upwards of ₹90,000 crore to enhance capacity over the next four years or so. To boot, the conditions are just right for building a hub airport.

What exactly is a hub airport?

- A hub airport is one served by a multitude of airlines, connecting several airports through non-stop flights.
- Historically, airports were designed keeping the requirements of the origin/destination passenger in mind. This meant operating separate arrival and departure terminals.
- Over time, better space-utilisation concepts led to the construction of a common passenger terminal with arrival/departure flows segregated on different floor levels. This spawned a new segment of passengers – transit flyers, who use the airport only to connect flights.

Concept of waves:

- A typical hub airport operates on the concept of waves. A wave of incoming flights arrives and connects with another wave of outgoing flights that departs an hour or two later.

⮩ 'Hubbing' allows for the maximum combination of flight pairs and a wider choice of destinations and frequencies for connecting passengers.

⮩ Importantly, while an aspiring hub looks at attracting foreign airlines to widen the number of direct point-to-point connections, it thrives on airlines nestled (based) at that airport, which dedicate more resources, aircraft, crew, manpower and infrastructure, and are enablers of growth.

⮩ Some global examples are (Hub airport/Home airline): London/British Airways; Frankfurt/Lufthansa; Atlanta/Delta Airlines; Dallas/American Airlines; Singapore/Singapore Airlines; Paris/Air France; Dubai/Emirates; Chicago/United Airlines; New York/American Airlines and Delta Airlines; Hong Kong/Cathay Pacific.

How it is a win-win situation for all?

⮩ A hub creates economies of scale for the airport and airlines alike.

⮩ The airport benefits from increased direct connectivity with other airports and more revenue opportunities due to increased passenger footfalls.

⮩ Improved passenger throughput has a knock-on effect on the wider airport ecosystem, such as aero and non-aero service providers at the airport, including cargo and ground handling, fuelling, retail and duty-free, vehicle parking, aircraft maintenance repair and overhaul (MRO), and fixed-base operation (FBO) services at the airport.

⮩ Airlines, on their part, get to serve city pairs that are otherwise economically unviable for non-stop flights.

⮩ Frequent fliers and business travellers get greater choice and flexibility with flights, destinations, and service frequencies, as well as lower ancillary costs, such as avoiding the time and cost of an overnight stay.

A force multiplier:

⮩ From the government's perspective, an airport acts as a force multiplier with economic activity, jobs and employment, investments, business, trade, commerce, tourism, culture, and benefits other sectors of the economy.

⮩ It is well established that the creation of one job in the aviation sector affects the creation of up to six jobs in allied sectors, such as tourism and hospitality.

⮩ All this propels the economic and social development of the city and its inhabitants, too.

Requirements for becoming a major airport hub:

There are three basic requirements for becoming a major airport hub,

a) whether domestic or international, i.e. sufficient local consumer demand;

b) good geographic location, and

c) necessary infrastructure to support high-volume traffic.

⮩ In India's case, the first two requirements are largely addressed and the focus is rightly on addressing the third requirement.

Factors in favour of India

⮩ India has the largest diaspora, or transnational community, at 18 million people across all six continents and regions.

⮩ India is located on busy international air corridors that connect Europe, Africa, and the Middle East with Asia, making it ideal for a transit hub and alternative/diversion/fuel stop/technical stop.

⮩ Being the fifth-largest economy in nominal GDP terms and the seventh largest by land mass, India can support development of more than one hub airport.

⮩ Airport business in India is largely monopolistic, with no competing airport in the same urban area.

⮩ Airport development in India is a regulated business with minimum downside risk for investors.

⮩ Airport tariff determination under the Airports Economic Regulatory Authority of India is a robust, fair, and transparent process.

Impediments:

⮩ There are capacity constraints at major airports because of a lack of landing slots, especially during peak hours;

⮩ the Airports Authority of India Act (AAI), 1994 constrains the AAI/airport operators from commercially exploiting available land for non-aeronautical activities;

⮩ A 'high cost-low fare' operating environment and increased competition hurts airline balance sheets and financials, which hurts the growth of airports;

⮩ India has 34 operational international airports, yet smaller international airports are either completely left out or have very limited scope in starting international flight operations;

⮩ Rationalisation of duties and taxes, such as bringing aviation turbine fuel under the ambit of goods and services tax, will enable airlines to reduce costs and emerge financially stronger, thereby benefiting airports.

Way Forward:

⮩ There is a need to develop inter-modal connectivity (rail/road – air) and logistics support infrastructure (warehousing) as a part of the future airport master plans to fully exploit potential with cargo and freight; aspiring hub airports can partner with tier-2 and tier-3 airports in their catchments; airports can broaden their revenue base by developing allied service capabilities, such as cargo handling, aircraft MRO and FBO.

TOWARDS A SINGLE LOW TAX REGIME

Context:

⮩ In December 2018, the late Finance Minister, ArunJaitley, announced that the 28% GST slab, which

he called the "dying slab", would be phased out,except for luxury items. India would eventually have just two slabs: 5% and a standard rate between 12% and 18% (apart from exempt items).

➲ The introduction of a uniform GST was a watershed moment in India since the country's earlier regime of taxes and cesses, both at the Centre and the States, was a big barrier to free trade and economic growth and was a cesspool of corruption.

Scope for KISS concept:

➲ However, GST is still a complicated tax regime with different slabs. It is not easy to comprehend or comply with, and is open to interpretation, harassment and avoidable litigation. To simplify it, Finance Ministry officials must be reminded of KISS.

➲ KISS (Keep It Simple, Stupid) is a well-known acronym and an accepted credo in business. Attributed to Lockheed aircraft engineer Kelly Johnson, it was meant to urge engineers to keep aircraft design so simple that even a stupid person would be able to repair the aircraft with ordinary tools on the combat field.

Tax regime in India:

➲ Empirical data from across the world on the benefits of a unified single taxcannot be denied. So, an unambiguous directive to the bureaucracy is necessary from the ruling dispensation to come up with just two categories: goods eligible for zero tax and goods that will fall under a single rate, say 10% or 12%. That means everything except those specifically exempt, is taxed.

➲ This needs bold and clear reformist thinking at the political level. Imposing a high GST in some areas does not make sense.

Case of five-star hotels:

➲ 'Sin' taxes, for instance, are at cross purposes with the government's policy of generating growth and creating jobs under 'Make in India'.

➲ A typical 300-room five-star hotel generates direct employment for around 500 people of whom 90% are waiters, housekeeping staff, front desk staff, security and concierge staff, besides cooks, financial and clerical staff. There are a host of others employed in associated services such as the spa, gift shops and swimming pool.

➲ The hotel also generates indirect employment in ancillary areas: it buys bed linen, furnishings, rugs and carpets, air conditioners, cutlery, electrical fittings and furniture, and consumes enormous quantities of food produce.

➲ All these generate jobs and income for farmers, construction contractors, artisans and other manufacturers. Five-star hotels also generate foreign exchange by attracting rich tourists and visitors. So, it's unwise to tax these hotels to death.

Case of luxury items:

➲ Similarly, high taxes on air-conditioners, air conditioned restaurants, chocolates and luxury cars create an economic ripple effect downstream, in a complex web of businesses that have symbiotic relationships. The effect finally reaches down to the bottom of the employment pyramid.

➲ The plan must be to figure out how to rev up the economy by making the rich and upper middle class spend and move more people up the value chain in order that more chocolates and ACs and automobiles are bought by them, instead of designing a tax system that keeps these products out of the new consumer class's reach.

Stark confusions in India's current tax regime:

➲ At an Iyengar Bakery, GST on bread is zero, but the vegetable sandwich is in the 5% tax slab, hitting the vegetable grower directly.

➲ The GST on buns is zero, but buns with a few raisins fall in the 5% slab.

➲ The GST on masala peanuts, murukku and namkeen is 12%. And the GST on cakes and chocolates is 18%.

➲ The same lack of logic applies to taxes on wine, rum and beer, which generate large-scale employment and are the backbone of grape and sugarcane farming and the cocoa industry.

➲ The ancient art of toddy tapping in villages, a large employment generator and income booster in rural areas, was replaced with Indian-made foreign liquor.

➲ In the automobile sector, the GST on electric cars, tractors, cycles, bikes, low-end and luxury cars ranges anywhere from 5% to 50%.

➲ The sale of automobiles is the barometer of an economy.

Items exempted from GST:

➲ There are items that are exempt from GST. Petrol, diesel, aviation turbine fuel are not under the purview of GST, but come under Central excise and State taxes.

➲ Central excise duties and varying State taxes contribute over 50% of the retail price of petrol and diesel, probably the highest in the world barring banana republics. There is distrust between the States and the Centre on revenue sharing.

➲ There is also anger at the Centre for riding roughshod over the States' autonomy and disregarding the federal structure of the Constitution.

Way Forward:

- The Finance Minister should take a cue from the Prime Minister, who hinted at major reforms in the aftermath of COVID-19, and do away with all the confusing tax slabs in one fell swoop. She can then usher in a truly single low tax regime along with a list of exempt items.
- That will ensure compliance, widen the tax net, improve ease of doing business, boost the economy, create jobs, increase tax collections and reduce corruption as witnessed in many countries – a move that will be both populist and well-regarded by economists.

OPEN NETWORK FOR DIGITAL COMMERCE

Context:

- The government of India announced the launch of the pilot phase of open network for digital commerce (ONDC) in five cities in late April with an aim to "democratise" the country's fast growing digital e-commerce space that is currently dominated by the two U.S.-headquartered firms, Amazon and Walmart.

What is ONDC?

- ONDC is a not-for-profit organisation that will offer a network to enable local digital commerce stores across industries to be discovered and engaged by any network-enabled applications.
- It is neither an aggregator application nor a hosting platform, and all existing digital commerce applications and platforms can voluntarily choose to adopt and be a part of the ONDC network.

ABOUT ONDC

Assigned to Quality Council of India (QCI)

Nine member council to design & accelerate adoption

Aims to digitize entire commerce value chain, standardize operations, optimize logistics

Replication of UPI System:

- The ONDC aims to enable buying of products from all participating e-commerce platforms by consumers through a single platform. Currently, a buyer needs to go to Amazon, for example, to buy a product from a seller on Amazon.
- Under ONDC, it is envisaged that a buyer registered on one participating e-commerce site (for example, Amazon) may purchase goods from a seller on another participating e-commerce site (for example, Flipkart).
- The ONDC model is trying to replicate the success of the Unified Payments Interface (UPI) in the field of digital payments. UPI allows people to send or receive money irrespective of the payment platforms they are registered on.
- The open network concept also extends beyond the retail sector, to any digital commerce domains including wholesale, mobility, food delivery, logistics, travel, urban services, etc.

What led to formation of ONDC?

- The Department for Promotion of Industry and Internal Trade (DPIIT), under Ministry of Commerce and Industries, conducted an outreach during the outbreak of the COVID-19 pandemic to understand its impact on small sellers and hyperlocal supply chain functioning.
- Post which, it found that there is a huge disconnect between the scale of online demand and the ability of the local retail ecosystem to participate.
- Following this, consultations were held with multiple ministries and industry experts and "ONDC was envisioned to revolutionise digital commerce in India," as per the strategy paper.
- ONDC has been envisaged as an entity which should be able to work without the need for day-to-day guidance and advisory from the shareholders/members.
- The independence of the management is linked to the financial independence of the entity, and therefore, the entity will be required to get funding independently and have a self-sustaining financial model.

What is the current status?

- Presently, ONDC is in its pilot stage in five cities – Delhi NCR, Bengaluru, Bhopal, Shillong and Coimbatore with a target of onboarding around 150 retailers.
- The government has also constituted an advisory council to analyse the potential of ONDC as a concept and to advise the government on measures needed to accelerate its adoption.
- Over the next five years, the ONDC expects to bring on board 90 crore users and 12 lakh sellers on the network, enabling 730 crore additional purchases and an additional gross merchandising value (GMV) of ₹3.75 crore.
- The GMV for the digital commerce retail market in India was ₹2.85 lakh crore ($38 billion) in 2020, which is only 4.3% of the total retail GMV in India.

What are the likely benefits of ONDC?

- The ONDC will standardise operations like cataloguing, inventory management, order management and order fulfilment, hence making it simpler and easier for small businesses to be discoverable over network and conduct business.
- However, experts have pointed out some likely potential issues such as getting enough number of e-commerce platforms to sign up, along with issues related to customer service and payment integration.

RBI WARNS OF RISKS FROM CROSS-BORDER OUTSOURCING OF IT SERVICES

Why in news?

- Recently, the Reserve Bank of India (RBI) has warned of risks from cross-border outsourcing of information technology (IT) services and recommended that regulated entities closely monitor such operations.
- The RBI's observations come at a time when it is considering a mandate for domestic processing of payment transactions in order to ring-fence India's local payment systems.

Institutions directed by the RBI:

- The provisions of the RBI's draft master directions are applicable to scheduled commercial banks, local area banks, small finance banks, and payments banks.
- Primary urban cooperative banks with asset size of more than Rs 1,000 crore, non-banking financial companies in top, upper and middle layers and credit information companies are also included.
- All-India financial institutions, such as the National Housing Bank and the National Bank for Agricultural and Rural Development, too, fall under the ambit of the draft directions.

Key Recommendations:

- The RBI has recommended that regulated entities build appropriate contingency and exit strategies. Additionally, firms should ensure that availability of records and the supervising authority would not be affected in the event of liquidation of the service provider.
- The RBI said that in principle, agreements should only be entered into with parties operating in jurisdictions generally upholding confidentiality clauses and agreements.
- However, the jurisdiction of the courts outside India, where data is stored and/ or processed, shall not extend to the operations of the regulated entity in India, on the strength of the fact that the entity's data is being stored and/ or processed there, even though the actual transactions are undertaken in India.
- The right of audit and inspection of service providers in different jurisdictions shall be ensured.

Background:

- In its Payments Vision Document released ealier, it said that in light of emerging geo-political risks, options would be explored to ring-fence domestic payment systems.
- The RBI, in particular, flagged the fact that global card networks stopped processing transactions in Russia following sanctions on the country by the US.

Way Forward:

- The broad aim of the RBI's draft directions is to ensure that outsourcing arrangements of regulated entities neither diminish the ability to deliver on obligations nor impede effective supervision.

NITI AAYOG REPORT ON INDIA'S GIG AND PLATFORM ECONOMY

Why in news?

- Recently, NITI Aayog launched a report titled 'India's Booming Gig and Platform Economy'.

Significance:

- The report provides a scientific methodological approach to estimate the current size and job-generation potential of the sector.
- It highlights the opportunities and challenges of this emerging sector and presents global best practices on initiatives for social security and delineates strategies for skill development and job creation for different categories of workers in the sector.
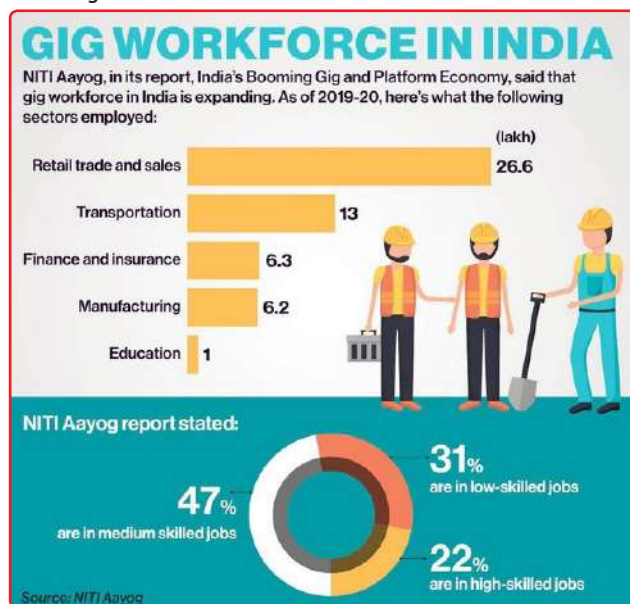
Gig workers in India:

- The report estimates that in 2020–21, 77 lakh (7.7 million) workers were engaged in the gig economy. They constituted 2.6% of the non-agricultural workforce or 1.5% of the total workforce in India.
- The gig workforce is expected to expand to 2.35 crore (23.5 million) workers by 2029–30.
- Gig workers are expected to form 6.7% of the non-agricultural workforce or 4.1% of the total livelihood in India by 2029–30.
- At present, about 47% of the gig work is in medium skilled jobs, about 22% in high skilled, and about 31% in low skilled jobs.
- Trend shows the concentration of workers in medium skills is gradually declining and that of the low skilled and high skilled is increasing.

Classification of gig workers:

- The report broadly classifies gig workers, those engaged in livelihoods outside the traditional employer-employee arrangement into platform and non-platform-based workers.

- While platform workers are those whose work is based on online software apps or digital platforms, non-platform gig workers are generally casual wage workers and own-account workers in the conventional sectors, working part-time or full time.

Recommendations:

- It has also recommended introducing a 'Platform India initiative', on the lines of the 'Startup India initiative', built on the pillars of accelerating platformisation by simplification and handholding, funding support and incentives, skill development, and social financial inclusion.
- It has suggested that self-employed individuals engaged in the business of selling regional and rural cuisine, street food, etc., may also be linked to platforms so that they can sell their produce to wider markets in towns and cities.
- The report puts forth suggestions for platform-led transformational and outcome-based skilling, enhancing social inclusion through gender sensitization and accessibility awareness programmmes for workers and their families and extending social security measures in partnership mode as envisaged in the Code on Social Security 2020.
- Other recommendations include undertaking a separate enumeration exercise to estimate the size of the gig and platform workforce and collecting information during official enumerations (PeriodicLabour Force Survey) to identify gig workers.

Way Forward:

- This report will become a valuable knowledge resource in understanding the potential of the sector and drive further research and analysis on gig and platform work."

SECURITY

ASTRA MK I BEYOND VISUAL RANGE AIR TO AIR MISSILE SYSTEM

Why in news?

- The Ministry of Defence, signed a contract with Bharat Dynamics Limited (BDL) for supply of ASTRA MK-I Beyond Visual Range (BVR) Air to Air Missile (AAM) and associated equipment for the Indian Air Force & Indian Navy at a cost of Rs 2,971 crore under Buy (Indian-IDDM) category.

Astra Project:

- The missile has been designed and developed by the Defence Research and Development Organisation (DRDO) for deployment on fighter jets such as Sukhoi-30 MKI and Tejas of the IAF and Mig-29K of the Navy.
- The Astra project was officially launched in the early 2000s, and the development of the Mk-1 version was complete around 2017.

- More than 50 private and public industries, including the IAF and Hindustan Aeronautics Limited (HAL), have contributed in building the Astra systems.

Capability:

- Air to Air missile with BVR capability provides large Stand Off Ranges to own fighter aircraft which can neutralise the adversary aircraft without exposing itself to adversary Air Defence measures, thereby gaining & sustaining superiority of the Air Space.
- BVM missiles are capable of engaging beyond the range of 20 nautical miles (37 km).
- The Astra Mk-1 has a range of around 110 km. The Mk-2 with a range over 150 km is under development while the Mk-3 with a longer range is being envisaged. One more version of Astra, with a range smaller than Mk-1's, too is under development.

Strategic significance:

- AAMs with BVR capability provide large stand-off ranges to aircraft so that they can neutralise adversary airborne assets without exposing themselves to adversary air defence measures.
- Stand-off range means the missile is launched at a distance far enough to allow the attacking side to evade defensive fire from the target.
- Astra is technologically and economically superior to many imported missile systems. The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20 km.
- The missile is integrated on the Sukhoi 30 MKI and will be integrated with other fighter aircraft in a phased manner, including Tejas. The Navy will integrate it on MiG 29K fighter aircraft on its aircraft carriers.

Transfer of Technology:

- The purchase will be under the Buy (Indian-IDDM) category of defence acquisition- or procurement from an Indian vendor of defence products that have been "indigenously designed, developed and manufactured" with a minimum of 50 per cent indigenous content (on the basis of cost).
- The Transfer of Technology from DRDO to BDL for production of ASTRA MK-I missile and all associated systems has been completed and production at BDL is in progress.

Way Forward:

- It will also create opportunities for several MSMEs in aerospace technology for a period of at least 25 years.
- The project essentially embodies the spirit of 'Aatmanirbhar Bharat' and will help facilitate realising the country's journey towards self-reliance in Air to Air Missiles.

ISRAEL TIES SHARPEN INDIA'S MILITARY EDGE

Context:

- As Israeli Defence Minister Benny Gantz is on an upcoming visit, it becomes essential to analyse the

possible contours of coordination between the two countries.

Bilateral relations:

- Bilateral relations with Israel are thirty years old, one aspect of which is that country extending military help to India even during the Cold War period, especially during the 1971 war with Pakistan.
- Its no-strings-attached help with ammunition and laser-guided missiles during the Kargil conflict years later had transformed the battlespace in India's favour.
- The contribution of Israel can be assessed just by the Phalcon air radar system and the joint production of the Barak missile defence system.

Enhanced Diplomatic ties:

- Previous governments could not strike a balance between Israel and Palestine and hence always saw Israel from the prism of the Palestinian issue.
- On the other hand, Prime Minister Narendra Modi in 2017 and 2018 visited Israel and Palestine, respectively, and this marked the first-ever visit of India's political leadership.
- In 2018, the then Israeli Prime Minister Benjamin Netanyahu paid an official visit to India. Since then, the relations between the two countries have seen an upward trajectory.

Israel in India's security and the foreign policy:

- The security and the foreign policy acknowledged that India's pursuit of politico-strategic equilibrium remains incomplete without Israel.
- Through the multi-alignment policy, India has de-hyphenated its relations with Palestine, and hence has moved much ahead with Israel in terms of cooperation in counter-terrorism measures, including intelligence sharing and missile supplies.
- The use of precision-guided Spice bombs in the non-military surgical strikes strongly indicates the choice of weapons that Israel can offer to India.

INDO-ISRAELI TIES
COMING OUT OF THE CLOSET?

1 India established diplomatic relations with Israel in 1992 after decades of strident pro-Palestine position

2 Defence ties zoomed upwards after Israel rushed emergency supplies to India during 1999 Kargil conflict

3 Israel emerged as India's second-largest arms supplier after Russia, notching around $1 billion in annual military sales. But the US has overtaken both Russia & Israel recently

MAJOR ONGOING & NEW PROJECTS

MISSILE DEFENCE SYSTEMS | Two joint DRDO-Israeli Aerospace Industries projects for surface-to-air missile systems with 70-km interception range. The one for Indian warships worth ₹2,606 crore, while ₹10,076 crore for IAF's air defence squadrons. Naval SAM ready and IAF one being developed

SPY DRONES | Army getting another 16 Heron medium-altitude, long-endurance unmanned aerial vehicles for ₹1,200 crore. India has inducted over 100 Israeli drones of different types

AIRBORNE WARNING & CONTROL SYSTEMS | India finalizing deal to acquire two more Phalcon AWACS for over $1 billion. Three Phalcon AWACS, mounted on IL-76 aircraft, earlier inducted under $1.1 billion tripartite agreement among India, Israel & Russia in 2004

ANTI-TANK GUIDED MISSILES | India buying 321 Israeli Spike ATGM launchers & 8,356 missiles for ₹3,200 crore. Initial buy could become much bigger with Bharat Dynamics slated for large-scale indigenous manufacture of third-generation ATGMs.

AEROSTAT RADARS | India to buy four more aerostat radars after inducting two EL/M-2083 radars inducted in 2004-2005 under a $145-million deal

Co-ordination between CIA, Mossad and RAW:

- The Quad Joint Leaders' Statement 2022 condemned the Mumbai and the Pathankot attacks and pledged to take concerted action against all terrorist groups, including those individuals and entities designated pursuant to the UNSC Resolution 1267(1999).
- This is a significant development as the perpetrators of 26/11 continue to be shielded by Pakistan. The statement might indicate a crucial upcoming development.
- Is it possible that the CIA, Mossad and RAW can actively coordinate to use different coercion tools against the terror groups that harmed the joint interests of the three?

Pakistan's proxy war against India:

- Possible coordination between the three agencies is necessary from another perspective. The recent use of Rocket Propelled Grenade Launchers (RPG) in the Mohali terror attacks and the findings that the US military hardware left in Afghanistan is now landing in Kashmir expands the horizon of Pakistan's proxy war against India.
- The shrinking foreign exchange reserves and mounting external debtapart from the Baloch and the Tehrik-e-Taliban Pakistan attacks on the military establishment might lead to a full-blown civil war in Pakistan.
- To divert attention, it might resort to terror attacks against the Indian interests to escalate the tensions that might endanger the South Asian peace and security. The next few months are all the more critical for India's security. In such a scenario, India's operational preparedness should be high.

Integration with Israel for new technologies:

- There can be active cooperation between the two countries for technology transfer or the direct purchase of the Iron Dome Air Defense System to protect military installations prone to attacks by Pakistan-based proxies.
- Rafael Advanced Defence Systems have developed the Iron dome.

Weapons based on Artificial Intelligence:

- Its Active cooperation with ISRO and DRDO can be sought to collaborate on futuristic weapons based on Artificial Intelligence and precise weaponry for external and internal security purposes.
- Israel has also gained expertise in weaponising intelligence where the adversary's military and proxies' build-up are internationally exposed.
- The exposure of the covert 2010 military deployment of Hizbollah and the 2018 secret atomic warehouse in Tehran are examples wherein Israel has actively used its intelligence to avoid escalation. Intelligence weaponisation sends strong signals that the covert operations have been exposed and need to be halted

immediately; failing which surgical strikes can soon follow.

➲ Also, it serves as an essential tool in perception management and psychological warfare, which play an essential role in building up the narratives in the home country and the international community apart from the adversary population.

➲ Coordination in intelligence can be helpful for India, wherein it can expose the terror launch pads from across the LOC. Such measures can also have the sword of being blacklisted in FATF hanging over Pakistan.

Other strategic interests:

➲ Other strategic interests include intelligence sharing, defence, cyber, and maritime security. From a futuristic perspective, the emergence of multilateral Mediterranean "security architectures" has become profound with the discovery of natural gas fields in Israel's Eastern Mediterranean offshore Tamar (2009) and Leviathan (2010), apart from Cyprus's Aphrodite (2011) and Egypt's Zohar (2015).

➲ The rise of the EastMed energy alliance that intends to take natural gas to Europe can be anessentialnatural gas source for India.

India's prospective for natural gas:

➲ Ifthe Abraham accord,which is already in place, can be extended to include Saudi Arabia, the natural gas can be brought to India too via underwater pipelines.

➲ If all goes well, the alliance between Israel, the U.S., Saudi Arabia and U.A.E. would be in place, and India can join the alliance for its energy and security requirements.

➲ Last year, the logic of India's strategic alliance axes got a stronghold with the first closed-door virtual meeting between foreign ministers of India, Israel, UAE and the US.

➲ India is on its path to be a part of the formulation of a structural framework that could be a win-win situation for the regional and the extra-regional players to push back the terror-sponsoring countries apart from the expansionist forces.

U.S. sanctions on Iran & challenges:

➲ As President Joe Biden has decided to retain the Iranian Revolutionary Guards on the US list of sanctioned terror organisations, it might negatively affect the prospects of a new nuclear deal with Iran. This will lead to the sharpening of the strategic polarisations in India's western neighbourhood, and China's influence over Iran is bound to increase.

➲ Simultaneous geopolitical convergences between India, Israel and the US to fight terror will also increase the threat factor.

➲ India and Israel have to be cautious concerning the attempts of the various proxy groups to harm the Israeli diplomats in India.

➲ For instance, Tal Yehoshua-Koren, wife of the Israeli defenceattache to India, was targeted in 2012 while an explosion took place near the Israeli Embassy on the 29th Anniversary of the establishment of the bilateral relations. It is only through joint efforts in human and signal intelligence that such attacks can be averted.

Way Forward:

➲ Overall, the future is bright for India's overwhelming presence in West Asia.

PROJECT TO TRACK SMALL FISHING VESSELS PENDING SINCE 26/11

Why in news?

➲ As the Quad grouping looks to track and address illegal, unreported and unregulated (IUU) fishing in the Indo-Pacific, an ambitious effort to install the satellite-based Vehicle Monitoring System (VMS) for small fishing vessels (less than 20 metres) across the country's coastline is still to be rolled out.

➲ Despite pilot studies being conducted, the project, conceived in the aftermath of the 26/11 Mumbai attacks, remains stuck.

Causes for delay:

➲ Fishermen don't want to get tagged as they do not want any of their illegal activities recorded and they are sceptical that others will get to know of where there is good catch.

➲ Second is that fishing is a State subject and there are local politics involved.

➲ There is no legislation to force fishermen to install the transponders and efforts by the Ministry of Fisheries to table the Indian Marine Fisheries Bill, 2021 which covers this has repeatedly been delayed due to the opposition from the States and fishermen.
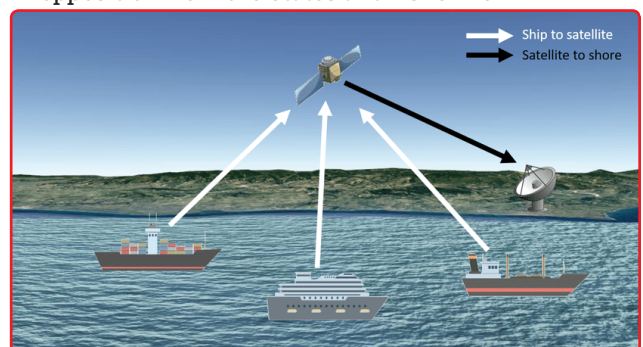
Indo-Pacific Maritime Domain Awareness (IPMDA) initiative:

➲ The Quad grouping, comprising India, Australia, Japan and the U.S., announced at the Tokyo summit an ambitious Indo-Pacific Maritime Domain Awareness (IPMDA) initiative.

➲ It aims to track "dark shipping" and to build a "faster, wider, and more accurate maritime picture of near-real-time activities in partners' waters" integrating

three critical regions in the Indo-Pacific;the Pacific Islands, Southeast Asia, and Indian Ocean Region (IOR).

Regulations globally on IUU fishing:

➲ There are two main regulations globally on IUU fishing, the Cape Town Agreement (CTA) and the Agreement on Ports State Measures (PSMA) and India is, so far, not a signatory to both agreements.

Regulation in India:

➲ The Automatic Identification System (AIS) is for bigger ships, which was made compulsory for all vessels above 20 metresafter 26/11 by the National Committee on Strengthening Maritime and Coastal Security (NCSMCS).

➲ For smaller fishing vessels, Vehicle Monitoring System (VMS), which is slightly different from AIS.

➲ AIS is a broadcast mode which anyone can receive while VMS is a proprietary system and one can't receive unless the data is given. In terms of functioning VMS has a transponder which relays data via a satellite.

Trails in collaboration with ISRO:

➲ Trials were conducted on tracking of vessels under 20 m first fitted on small patrol boats in Mumbai followed by trials on fishing vessels both of which were successful.

➲ Further a pilot was carried out on a small number of fishing vessels along the coasts of Gujarat and Tamil Nadu.

➲ The trials were conducted in association with the Indian Space Research Organisation (ISRO) on one of their communication satellites and the transponders have advanced features like weather alert and so on but there has been no progress.

➲ Trials were again conducted in 2021 in collaboration with a start-up which were also successful. But there has been no movement since.

Growing concern on IUU

➲ There has been growing concern and action on IUU fishing that depletes fish stocks, destroys marine habitats, puts fishermen at disadvantage and impacts coastal communities, especially in developing countries.

➲ In addition, there is also the issue of subsidies for fishermen. It is believed that more the subsidies given, more the illegal fishing, and there has been a campaign across the world against subsidies. India has been under pressure over this.

Way Forward:

➲ World over fishing vessels are supposed to have VMS which does not only give the position identity, the fishing vessel is also supposed to feed in the volume of the catch and where was it caught which tackles the issue of IUU.

BRAHMOS, 21 AND DEVELOPING

Why in news?

➲ On June 12, 2001, the BrahMos supersonic cruise missile was first tested from a land-based launcher in Chandipur.

➲ In the 21 years since, BrahMoshas been upgraded several times, with versions tested on land, air and sea platforms. It recently bagged an export order from the Philippines.

Background and development:

➲ Since the early 1980s, the Integrated Guided Missile Development Programme, conceived and led by Dr A P J Abdul Kalam, started developing a range of missiles including Prithvi, Agni, Trishul, Akash and Nag, with a wide spectrum of capabilities and ranges.

➲ In the early 1990s, India's strategic leadership felt the need for cruise missiles, guided missiles that traverse the majority of their flight path at almost constant speed and deliver large warheads over long distances with high precision. The need was felt primarily following the use of cruise missiles in the Gulf War.

➲ An Inter-Governmental Agreement was signed with Russia in Moscow in 1998 by DrKalam, who headed the Defence Research and Development Organisation (DRDO), and N V Mikhailov, Russia's then Deputy Defence Minister. This led to the formation of BrahMos Aerospace, a joint venture between DRDO and NPO Mashinostroyenia (NPOM), the Indian side holding 50.5% and the Russians 49.5%.

➲ In 1999, work on development of missiles began in labs of DRDO and NPOM after BrahMos Aerospace received funds from the two governments.

➲ The first successful test in 2001 was conducted from a specially designed land-based launcher. The missile system has since reached some key milestones, with the first major export order of $375 million received from the Philippines Navy this year.

MILESTONES

2001: Maiden launch from land-based launcher in anti-ship mode from ITR, Chandipur

2002: Launch in land-to-sea configuration from ITR

2003: Maiden launch from Naval warship

2005: Navy receives first batch of BrahMos

2007: BrahMos land system delivered to Indian Army

2013: Launch from a submerged platform in Bay of Bengal

2017: Cruise missile's maiden launch from Su-30MKI

2020: Su-30MKI equipped with BrahMos inducted in an IAF formation

2022: First mega export order from Philippines Navy

Strategic significance:

➲ BrahMos is a two-stage missile with a solid propellant booster engine. Its first stage brings the missile to supersonic speed and then gets separated. The liquid ramjet or the second stage then takes the missile closer to three times the speed of sound in cruise phase.

- The missile has a very low radar signature, making it stealthy, and can achieve a variety of trajectories. The 'fire and forget' type missile can achieve a cruising altitude of 15 km and a terminal altitude as low as 10 m to hit the target.
- Cruise missiles such as BrahMos, called "standoff range weapons", are fired from a range far enough to allow the attacker to evade defensive counter-fire. These are in the arsenal of most major militaries in the world.
- The BrahMos has three times the speed, 2.5 times flight range and higher range compared to subsonic cruise missiles. With missiles made available for export, the platform is also seen as a key asset in defence diplomacy.
- An extended range version of the BrahMos air-launched missile was tested from a Sukhoi-30 MKI recently.
- On January 11, an advanced sea-to-sea variant of BrahMoswas tested from the newly commissioned INS Visakhapatnam.

Present and future:

- What makes the missile system unparalleled is its extreme accuracy and versatility. Land-based BrahMos formations along the borders, BrahMos-equipped Sukhoi-30s at bases in Northern theatre and Southern peninsula, and BrahMos-capable ships and submarines deployed in sea together form a triad.
- With requirements evolving in multi-dimensional warfare, the BrahMos is undergoing a number of upgrades and work is on to develop versions with higher ranges, manoeuvrability and accuracy.
- Versions currently being tested include ranges up to 350 km, as compared to the original's 290 km. Versions with even higher ranges, up to 800 km, and with hypersonic speed are said to be on cards. Efforts are also on to reduce the size and signature of existing versions and augment its capabilities further.

Versions deployed in all three Armed forces are still being tested regularly, and so are versions currently under development.

Land-based:

- The land-based BrahMos complex has four to six mobile autonomous launchers, each with three missiles on board that can be fired almost simultaneously. Batteries of the land-based systems have been deployed along India's land borders in various theatres.
- The upgraded land attack version, with capability of cruising at 2.8 Mach, can hit targets at a range up to 400 km with precision. Advanced versions of higher range and speed up to 5 Mach are said to be under development. The ground systems of BrahMosare described as 'tidy' as they have very few components.

Ship-based:

- The Navy began inducting BrahMos on its frontline warships from 2005. These have the capability to hit sea-based targets beyond the radar horizon. The Naval version has been successful in sea-to-sea and sea-to-land modes.
- The BrahMoscan be launched as a single unit or in a salvo of up to eight missiles, separated by 2.5-second intervals. These can target a group of frigates with modern missile defence systems.

Air-launched:

- On November 22, 2017, BrahMoswas successfully flight-tested for the first time from a Sukhoi-30MKI against a sea-based target in the Bay of Bengal. It has since been successfully tested multiple times.
- BrahMos-equipped Sukhoi-30s, which have a range of 1,500 km at a stretch without mid-air refuelling, are considered key strategic deterrence for adversaries both along land borders and in the strategically important Indian Ocean Region.
- The IAF is said to be integrating BrahMos with 40 Sukhoi-30 fighter jets across the various bases.

Submarine-launched:

- This version can be launched from around 50 m below the water surface. The canister-stored missile is launched vertically from the pressure hull of the submarine, and uses different settings for underwater and out-of-the-water flights.
- This version was successfully tested first in March 2013 from a submerged platform off the coast of Visakhapatnam.

TOUR OF DUTY SCHEME

Why in news?

- The Ministry of Defencehas recently approved the ambitious Tour of Duty (ToD) scheme.
- Already adopted in several other countries, the Tour of Duty, or 'Agneepath', is a scheme under which the forces will recruit soldiers on a short-term and long-term basis to serve the country.

Tour of Duty is not conscription:

- Conscription refers to the mandatory of youth in the national armed forces. In some countries, youth must serve a minimum number of years in the armed forces. Countries that follow the practice of conscription include Israel, Norway, North Korea, and Sweden.
- Not to be military conscription like in Israel, the Army has branded ToD as an opportunity for India's youth to experience military life without having to join the armed forces; Army, Navy, and the Air Force on a long-term basis.

How it will function?

- The recruitment of soldiers in the Army will be conducted under the new scheme in the immediate

future, and the duration of service for 50 per cent of the recruits could be between three to five years, while the rest may have a much longer tenure.

➲ All the recruits under the Agneepath scheme shall be released from service after four years. Then 25 per cent will be re-enlisted for full service with a fresh date of joining.

➲ The first four years of contractual service would not be counted towards their full service for the fixation of pay and pension.

The rationale for Tour of Duty:

➲ The scheme is also said to benefit the Army financially. This recruitment model has been conceptualised to address personnel shortages, including officers.

➲ It has also been proposed as a means to generate increased employment opportunities, with the ultimate goal of ensuring that 40 per cent of the personnel are recruited through this medium.

➲ Currently, the Army recruits young people under the Short Service Commission for an initial tenure of 10 years, extending up to 14 years.

➲ With no recruitment taking place for nearly two years now in the military, there has been considerable anxiety among the youth, with protests in Haryana and Punjab over the delay.

THE FRAGILE STATE OF NUCLEAR DISARMAMENT

Why in news?

➲ Recently, the Stockholm International Peace Research Institute (SIPRI) released its yearbook highlighting some worrying trends of the past year in international security.

➲ The expected rise of the global nuclear arsenal was the chief cause of concern among SIPRI experts.

➲ The comprehensive report claims that while absolute numbers of nuclear arsenal have reduced, they are expected to grow over the next decade.

What about global arms imports?

➲ All nuclear weapon owning states have, over the years, stated and worked upon their intention to modernise multiple facets of their armed forces ranging from the development of newer and more efficient nuclear submarines, aircraft carriers, fighter

jets, manned and unmanned aerial vehicles to the growing spread of the use of missile defence systems which may result in aggravating security concerns for other countries.

➲ India as being the top weapons importer during the 2017-2021 period. Other countries to feature in the top five arms importers list include Saudi Arabia, Egypt, China, and Australia. According to SIPRI, these five nation states account for 38% of total global arms import.

What are the key developments/concerns flagged by the yearbook?

➲ It mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying indicators of an unstable system.

➲ It also highlighted three cause of concern trends: Chinese-American rivalry, involvement of state and non-state actors in multiple conflicts, and the challenge that climatic and weather hazards pose. It is important to note here that the threat posed by climate change seems to feature in the report only nominally.

➲ The marginal downsizing observed in the nuclear arsenal has come mostly from the U.S. and Russia dismantling retired warheads. But the Russian invasion of Ukraine has raised some serious eyebrows because of the continuous rhetoric from the Kremlin over them not shying away from the use of nuclear weapons.

➲ China's recent activities surrounding construction of 300 new nuclear missile silos have also been turning heads.

Trends in Military Spending

➲ During 2012-2021, military spending as a percentage of gross domestic product has largely been stable. If anything, the average worldwide trend has been slightly downward.

➲ Russia leads the charge in absolute numbers of nuclear inventory, however it is the U.S. that has the largest number of deployed warheads.

➲ The U.K. has 225 nuclear weapons in its inventory, while France has 290, China has 350, India has 160, Pakistan has 165. Israel is estimated to have 90 and North Korea 20.

➲ It is concerning to see how global discourse has created a sense of fear around China's military modernisation and their upward trend in nuclear weapons development while the thousands of nuclear weapons held by the U.S. don't seem to attract a similar level of attention.

What is the general attitude among countries about existing nuclear and arms related treaties?

➲ Earlier in 2022, the leaders of the P5 countries (China, France, Russia, the U.K. and the U.S.) issued a joint

statement affirming the belief that "a nuclear war cannot be won and must never be fought".

⮑ The joint statement also highlighted their seemingly collective belief that bilateral and multilateral arms control agreements and commitments were indeed important.

⮑ The dichotomy of this sentiment against the upward trend in absolute numbers of arms and nuclear arsenals is rather unsettling.

⮑ One could however claim that even with these upward trends, the nation states are making sure to remain well within the ambit of what the treaties and agreements ask for.

⮑ The recent Russian invasion of Ukraine and the subsequent NATO bids by Finland and Sweden seem to be telling events.

⮑ While the Ukrainian invasion saw Russian military and political establishments hype-up its nuclear attack rhetoric against Ukraine, its primary leadership (both civil and military) had been rather diplomatic and 'relatively' cordial in its treatment of the Finnish and Swedish NATO bids.

⮑ The year 2021 also saw the Treaty on the Prohibition of Nuclear Weapons, 2017 coming into effect. The Nuclear Suppliers Group (NSG) and the Missile Technology Control Regimes (MTCR) held their annual meetings despite decision making being limited due to the COVID-19 pandemic.

What lies ahead?

⮑ The recent geopolitical events transpiring around the world in practically all regions have made the global security climate more unstable.

⮑ It is further aided by actions of authoritarian leaders of not just non-democratic systems but also of strongmen leaders of democratic systems.

⮑ The muscular military policies of these nations coupled with the continuous use of rhetoric that fuel public sentiment over the state's use of military assets make ripe conditions for the situation to further deteriorate.

⮑ A strong political opposition would be needed to help keep the ruling dispensation in check.

⮑ Furthermore, the two largest nuclear weapons holding states need to take on a more engaging role in the international arena.

CHINA UPGRADED FIREPOWER ON LAC

Why in news?

⮑ It is said that the Chinese People's Liberation Army (PLA)has vastly expanded troop accommodation within 100 km from the Line of Actual Control (LAC) in the western sector.

China's preparation

⮑ Long-range artillery and rocket systems, upgraded air defence systems, expanded runways, and hardened blast pens to house fighter aircraft, on its side in the last two years since the stand-off in eastern Ladakh began.

Model villages:

⮑ They have also set up captive solar energy and small hydel power projects all along the LAC. This enhances their winter sustenance capabilitymanifold, this is apart from the model villages they are building all along the LAC.

⮑ Four PLA Divisions under the Xinjiang military district are being rotated on their side facing eastern Ladakh.

⮑ All these Divisions are in the process of being converted into Combined Arms Brigade (CAB).

Weapons upgrade:

⮑ The 4th Division, which has one armoured regiment, has inducted the ZTQ 15 (Type 15) third generation modern light tank, replacing the ZTZ-88 first generation tanks in service.

⮑ The 6th Division which operates the Type 96 A second generation tanks remains the same. In terms of technology upgradation, the fire control systems of the tanks have also been upgraded.

⮑ Similarly, two mechanisedbrigades which operate wheeled armoured personnel carriers (APCs) have upgraded from the ZBL-08 to the latest ZTL-11 APCs.

⮑ The 11th Division remains a medium CAB. They have also inducted the CSK series of assault vehicles akin to U.S. Army Humvees.

⮑ The PLA has developed heliports at Shigatse and Rudokand airbases have been upgraded with extended runways and blast pens at Gargunsh, Lhasa and Guangzhou.

Better mobility:

⮑ In terms of long range firepower, the PLA has upgraded its artillery by replacing the towed howitzers with truck-mounted howitzers having a range of 50 km. This gives better mobility, faster shoot and scoot ability and less deployment time, officials noted.

⮑ In addition, the PLA has deployed the PHL-3 Multi-Rocket Launch Systems (MRLS) with a range of over 100 km and has better targeting than earlier versions. This is a Chinese version based on the Russian Smerch MRLS, three regiments of which are in service with the Indian Army.

Developments in eastern sector:

➲ In the eastern sector, opposite Arunachal Pradesh, China has moved artillery guns within 50 km range from the LAC.

➲ In air defence, the older systems have been replaced with HQ-17 surface to air missiles and the long range HQ-9 has been deployed at Chip Chap ridge. The HQ-9 is believed to be based on the Russian S-300 missile system with a range from 100 to 300 km.

UAVs:

➲ China has also significantly expanded its Unmanned Aerial Vehicles (UAV) network and usage in areas close to the LAC with their employment for a variety of tasks from intelligence, surveillance and target acquisition and reconnaissance (ISTAR) capabilities and logistics support.

➲ Flight sorties are being coordinated from a unified command centre and are extensively monitored for further improvement.

Progress by India:

➲ Following the confrontation on the Kailash range on the south bank of Pangong Tso in August 2020 when India and China deployed tanks on the mountain peaks at over 15,000 feet, the Indian Army has issued a tender for the procurement of light tanks.

➲ Since the stand-off, India too has significantly expanded its military capability and augmented infrastructure on its side of the LAC. For instance, India too has deployed Smerch MLRS and BrahMos cruise missile systems in Arunachal Pradesh closer to the LAC.

➲ Each side continues to deploy over 50,000 troops each in eastern Ladakh as the process of disengagement from friction areas and de-escalation remains incomplete.

<div style="background:red;color:white;text-align:center">**ENVIRONMENT**</div>

NTPC'S BIODIVERSITY POLICY FOR CONSERVATION AND RESTORATION OF BIODIVERSITY

Why in news?

➲ Recently, National Thermal Power Corporation Limited (NTPC Ltd.) released renewed Biodiversity Policy 2022, an integral part of NTPC's Environmental Policy.

Background:

➲ NTPC was the first PSU to issue Biodiversity Policy in 2018. In the same year, NTPC became a member of the India Business & Biodiversity Initiative (IBBI).

Objectives:

➲ It has issued renewed Biodiversity Policy 2022 to establish a comprehensive vision and guiding principle for conservation, restoration, and enhancement of biodiversity.

➲ Its objectives are aligned with environmental and sustainability policies.

➲ Moreover, the policy is also designed to support all the professionals of the NTPC Group to help them contribute toward the achievement of the targets set in this field.

Scope:

➲ NTPC will further strengthen its current efforts to achieve a 'no net loss' of biodiversity at all of its currently operating sites and ensure there is a net positive balance wherever applicable.

➲ It aims to mainstream the concept of biodiversity across NTPC's value chain and adopt a precautionary approach for sustainable management of biodiversity in all the decision-making processes to ensure the Earth's variety of life in and around the business units of NTPC.

➲ The policy also aims to adopt systematic consideration of local threats to biodiversity beyond the company's business activities.

Collaborative efforts for biodiversity conservation:

➲ As part of its capacity building, NTPC is raising awareness among local communities, employees, and its associates across the supply chain about biodiversity through project-specific and national level trainings in collaboration with experts.

➲ NTPC is also collaborating with local communities, organizations, regulatory agencies and research institutes of national/international repute in the field of biodiversity.

➲ Further, NTPC will be adhering to legal compliances with respect to biodiversity by complying with rules and regulations related to the environment, forest, wildlife, coastal zone, and green cover during planning and execution of its projects.

➲ In a major initiative undertaken by NTPC, it has signed a five-year agreement with Andhra Pradesh Forest Department for conservation of Olive Ridley Turtles in the coastline of Andhra Pradesh.

RECEDING GLACIERS & THE ARCTIC

Context:

➲ In the two decades since, the age-old polar ice sheets, both in the Arctic and Antarctic, have been melting away, and the newly formed ice sheets are not strong or durable enough to withstand even the slightest change in temperature.

➲ This means that from being the frozen tundra and ice world, the poles are now more of water and thin ice.

How it is impacting the planet?

➲ Receding glaciers, thinning ice sheets and shrinking ice caps are contributing to a rise in sea levels, alterations in wildlife populations and changes in the lifestyles of indigenous populations.

- Thawing ice opened up shorter shipping routes; business became better. But now, with no abatement in melting, this is a cause for alarm, as an unfrozen North Pole may have several adverse effects.
- Experts say that while the entire planet is suffering from global warming, the Arctic is heating up twice as fast as the other places, leading to disappearing permafrost, fires in boreal forests and unprecedented changes in geography and biodiversity.
- Most of the melting ice is freshwater, so we are losing potable water reservoirs. Just as the Third Pole, the Himalayas, are also losing their freshwater reservoirs. Permafrost loss releases huge amounts of methane hitherto trapped beneath, further accelerating the greenhouse effect.

Countries in Arctic region:

- Countries that are a part of the Arctic region include Canada, Denmark (Greenland), Norway, Russia, the USA (Alaska), Finland, Sweden and Iceland, all members of the intergovernmental Arctic Council.
- Most of the four million inhabitants of the region are indigenous people.

India's role in Arctic studies:

- India has been an active participant in Arctic studies, and its draft Arctic Policy was released in January 2021.
- At the virtually held Third Arctic Science Ministerial meeting in May 2021, India welcomed collaborations towards strengthening observational systems and sharing of data to enhance knowledge.
- India is mainly concerned with science and research activities, economic and human development cooperation, transportation and connectivity, governance and international cooperation, and national capacity building.
- It is by now clear that changes in the Arctic could impact water security and sustainability, weather and monsoon patterns, coastal erosion and glacial melting, economic security and other critical aspects of national development.

How Arctic region affects India?

- Monsoons: Although India is 7,000 km away from the Arctic, the region affects variations in the Indian monsoons that are an integral part of India's weather patterns that affect agriculture.
- Energy Security:Another factor is the crucial role the Arctic could play in energy security and it is also a source of rich minerals and hydrocarbons.
- Sea level rise: India's long coastline of more than 7,500 km could also get inundated if there is a further sea level rise brought on by the albedo effect, when ice sheets get reduced, the surface ice that reflects sunlight back to the skies also gets reduced, leading to overheating, which in turn causes further melting of ice.

The region affects variations in the Indian monsoons

Arctic could play in energy security

Sea level rise
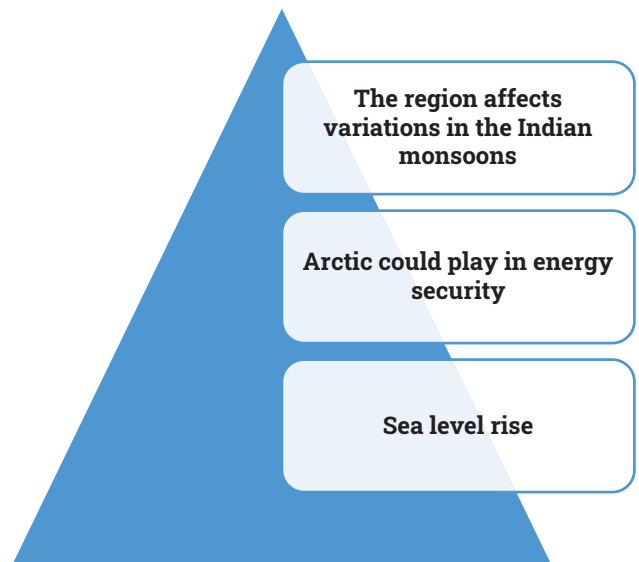
Himadri research station:

- India's research station in the Arctic, the Himadri, is reputed. India was made an observer on the Arctic Council in 2013, one among 13 countries to have that position. The status was renewed in 2018.
- India first connected with the Arctic in 1920, becoming party to the Svalbard Treaty. The first Indian expedition to the Arctic was undertaken in 2007 and India established the Himadri station at Nyalesand, Svalbard, in 2008.

Concerns:

- Extreme weather changes brought on by global warming could redistribute heat, alter the earth's weather and climate, slow down the Atlantic currents and the temperatures in North America and Europe may dive, affecting precipitation patterns in the tropics, say experts, also pointing out that this could bring on the tipping point in the earth system.

Approach for India:

- India's approach needs to focus on science and technology and how best we can conserve the ecology and frozenness of the polar region in order to prevent further deterioration.
- India could also negotiate for itself ways to share knowledge and gain economic benefits from engaging with Arctic countries and actively participating in Arctic-related policy measures.
- India needs to enhance its presence for launching scientific projects to study the interactions between cryosphere, atmosphere and ocean in order to understand long-term impacts on the country.
- It is essential that India defines its strategy as well as a policy for the Arctic in the near future and contributes towards generating strategic knowledge for the region. Such knowledge will help ensure food, energy and resource security for the country.

RIVERS FACING HEAVY POLLUTION: CSE

Why in news?

➲ Recently, the State of Environment Report, 2022 from the environmental NGO, the Centre for Science and Environment (CSE) was launched.

➲ The report is an annual compendium of environment-development data and is derived from public sources.

Key observations:

➲ India has 764 river quality monitoring stations across 28 States. Of these, the Central Water Commission tested water samples from 688 stations for heavy metals between August 2018 and December 2020.

➲ Of the 588 water quality stations monitored for pollution, total coliform and biochemical oxygen demand was high in 239 and 88 stations across 21 States, an indicator of poor wastewater treatment from industry, agriculture and domestic households.

➲ India dumps 72% of its sewage without treatment. Ten States do not treat their sewage at all, as per the Central Pollution Control Board.

Metal Pollution

➲ Three of every four river monitoring stations in India posted alarming levels of heavy toxic metals such as lead, iron, nickel, cadmium, arsenic, chromium and copper.

➲ In about a fourth of the stations, which are spread across 117 rivers and tributaries, high levels of two or more toxic metals were reported.

➲ Of the 33 monitoring stations in the Ganga, 10 had high levels of contaminants.

➲ The river, which is the focus of the Centre's Namami Gange mission, has high levels of lead, iron, nickel, cadmium and arsenic.

Coastline erosion:

➲ Over a third of India's coastline that is spread across 6,907 km saw some degree of erosion between 1990 and 2018.

➲ West Bengal is the worst hit with over 60% of its shoreline under erosion.

➲ The reasons for coastal erosion include increase in frequency of cyclones and sea level rise and activities such as construction of harbours, beach mining and building of dams.

Ocean Health Index:

➲ While the global average of the Ocean Health Index, a measure that looks at how sustainably humans are exploiting ocean resources, has improved between 2012 and 2021, India's score in the index has declined over the same period.

Forest cover in India:

➲ India's total forest cover has registered a little over a 0.5% increase between 2017 and 2021 though most of the increase has taken place in the open forest category, which includes commercial plantations.

➲ This has happened at the cost of moderately dense forest, which is normally the area closest to human habitations.

Concerns:

➲ At the same time, very dense forests, which absorb maximum carbon dioxide from the atmosphere, occupy just 3% of total forest cover.

➲ India has a forest cover of 77.53 million hectares. But recorded forests, the area under the forest department tare only 51.66 million. This gap of 25.87 million hectares, a size bigger than U.P. remains unaccounted.

NSEFI'S PAN-INDIA ROOFTOP SOLAR AWARENESS CAMPAIGN

Why in news?

➲ Recently, Union Minister of State for New and Renewable Energy launched the Pan-India Rooftop Solar Awareness Campaign in an event at Bidar, Karnataka.

Significance:

➲ Rooftop Solar provides an opportunity to the common person to make his contribution towards Global Warming & Climate Change.

➲ This campaign titled "GHAR KE UPAR SOLAR IS SUPER" shall aim at mobilizing local government, citizens, RWAs, and Municipalities to spread awareness of Solar Rooftop.

Key Highlights

➲ The Ministry is working towards achieving target of 500 GW of non-fossil by 2030

➲ The rooftop solar will play major role and Tier-2 & Tier-3 cities offer maximum potential in achieving this target.

➲ Karnataka alone has the potential of 1 GW rooftop solar

➲ The MNRE is providing 40% of subsidy for households to install solar.

About Pan India Rooftop Awareness Program:

➲ NSEFI, with the support of the German Solar Association (BSW) and the German Federal Ministry of Economic Cooperation and Development (BMZ) under the Sequa KVP Programme, is launching a 3 year long, Pan India Rooftop Awareness Program aimed at increasing awareness of Solar Rooftops among 100 Indian towns and cities, especially tier 2 and tier 3 towns/cities.

About National Solar Energy Federation of India (NSEFI):

➲ National Solar Energy Federation of India (NSEFI) is an umbrella organization of all solar energy stakeholders of India which works in the area of policy advocacy and is a National Platform for addressing all issues connected with solar energy growth in India.

⮞ It consists of leading International, National and Regional companies and includes Solar Developers, Manufacturers, EPC Contractors, Rooftop Installers, System Integrators, and Balance of Plant suppliers and Manufacturers, Small and Medium Enterprises and works in a complimentary manner with the Central and State Governments for achieving India's National Solar Target of 100 GW by 2022 & Renewable Target of 450 GW by 2030.

SOLAR ENERGY POTENTIAL IN THE NORTH EAST REGION OF INDIA

Context:

⮞ India's northeastern region (a collection of eight states, constituting 3.8% of the Indian population and 8% of her area) is crucial for achieving the India's Paris Accord obligations as well as the COP26 Glasgow commitments (India to be carbon neutral by 2070, 50% of electricity capacity from non-fossil fuels and reduction of 1 billion tonnes of cumulative carbon emissions from business-as-usual by 2030).

⮞ With just 8% of the area, the North East Region (NER) contributes 24% to the national forest area. In addition, while India has 22% of its total area under forests, this statistic is 65% for NER. So, what Amazon is to the world, NER is to India.

Why North East Region (NER) is economically weaker?

⮞ However, with about two-thirds of its area under forests, there is very little land available for productive economic activities, which results in below average per-capita incomes and widespread poverty in the region.

Low level of per-capita power consumption:

⮞ One index to measure this is the low level of per-capita power consumption in the region, which is a third of the national average. Other similar statistics are that NER accounts for only 1.1% of total electricity sales and 1.5% of the installed capacity in the country.

⮞ It is nobody's case to make way for productive economic activities by reducing the forest area in the region. But, low level of power consumption in the region is a binding constraint to the economic prosperity of the region.

⮞ In this scenario, an attractive option would be to exploit the vast untapped renewable energy (RE) potential of the region. As per ministry of new and renewable energy (MNRE) data, the total RE potential of the region is 129 GW, of which the realized potential is less than 4%.

Renewable Energy (RE) potential of NER

⮞ As against a potential of about 62,300 MW of solar power in NER, the realized potential is only 176 MW (less than 0.3% of potential).

⮞ Though the solar intensity in the North East is less than in say, Rajasthan, but the high average cost of supply of electricity in the region, would be able to absorb this constraint, to be able to supply RE power in a financially viable manner.

⮞ As solar power is intermittent, the vast hydro potential of the region would help in providing Round the Clock (RTC) RE power in the region.

Scope of Solar power in NER:

⮞ Solar power is land-intensive and land is a highly contested resource given the vast forest resource of the NER.

⮞ However, as per International Renewable Energy Association (IRENA), solar power now accounts for almost a third of global renewable energy capacity, partly because of the many unconventional ways in which solar power can be generated: it is estimated that Germany could house around 20 GW of solar energy on water and this can be replicated in NER given the numerous water bodies in the region, as per World Economic Forum, floating solar power systems are also regarded as sustainable and are quicker to install.

Way Forward:

⮞ Renew Power has recently won a tender for 400 MW of RTC RE power at a first year tariff of Rs 2.90 per unit of power.

⮞ As already stated, the high average cost of supply in NER (as high as Rs 7.49 per unit of power in Nagaland in 219-20) leaves enough margin to address the issue of low solar intensity in the region to provide solar power in a financially viable manner.

⮞ To make the NER the hotspot of solar energy in India, there may be a need to think differently—maybe a solar water park is the answer for putting up solar panels across widespread water bodies in the region. Utilization of more solar power in NER is necessary for the sake of the world, the country and the North Eastern Region.

INDIA REBUTS ENVIRONMENT PERFORMANCE INDEX 2022 FINDINGS

Why in news?

⮞ After being ranked at the bottom of the Environment Performance Index (EPI), India has rebutted the findings of the analysis saying its indicators are 'extrapolated' and based on 'unfounded assumptions'.

About Environment Performance Index (EPI):

⮞ The EPI is an analysis by researchers of Yale and Columbia University which provides a data-driven summary of the state of sustainability around the world.

⮞ Using 40 performance indicators across 11 issue categories, the EPI ranks 180 countries on climate change performance, environmental health and

ecosystem vitality. These indicators provide a gauge at a national scale of how close the countries are to established environmental policy targets.

ENVIRONMENT PERFORMANCE INDEX

NEIGHBOURHOOD: WHERE INDIA STANDS

Afghanistan	81	Pakistan	176
Sri Lanka	132	Bangladesh	177
China	160	India	180
Nepal	162		

TOP 5: Denmark, UK, Finland, Malta, Sweden

SOME KEY INDICATORS, AND INDIA

■ Biodiversity	179	■ Green House Gas emissions	171
■ Protected Areas	177		
■ Species Protection Index	175	■ Biodiversity habitat index	170
■ Air Quality	179	■ PM 2.5	174
■ Climate Policy	165	■ Waste management	151
■ Ecosystem vitality	178		

EPI Index 2022 findings:

➲ The United States placed at the 20th spot of the 22 wealthy democracies in the global west and 43rd overall.

➲ The lowest scores went to India (18.9), Myanmar (19.4), Vietnam (20.1), Bangladesh (23.1) and Pakistan (24.6).

➲ Most low-scoring countries are those that have prioritized economic growth over sustainability, or those that are struggling with civil unrest and other crises.

➲ India, with increasingly dangerous air quality and rapidly rising greenhouse gas emissions, falls to the bottom of rankings for the first time, the report read. China is placed 161st, with an overall EPI score of 28.4.

Index on India:

➲ India ranked at the bottom with a total score of 18.9, while Denmark was the top scorer as the world's most sustainable country.

➲ India is now rankedlast in a list of 180 countries compared to 168th in 2020, having prioritised, per the report, "economic growth over environmental sustainability".

➲ It has been ranked poorly across 40 indicators divided into 11 categories—climate change mitigation, air quality, waste management, water and sanitation, heavy metals, biodiversity and habitat, ecosystem services, fisheries, agriculture, acid rain, and water resources.

Objections raised by India:

➲ Rejecting the findings, the environment ministry, said that India has already achieved the target of 40 percent of installed electricity capacity from non-fossil fuel-based sources.

➲ The government has also said that the effect of policies to reduce emissions like increase in renewables use, electric vehicles, creation of carbon sinks, etc, in the coming years should have been taken into account while assigning ranks on emissions by 2050. The EPI authors say only the current showing matters.

Projected GHG Emissions levels in 2050:

➲ Noting that the EPI has a new indicator in the Climate Policy objective which is 'Projected GHG Emissions levels in 2050', the Indian ministry said that 'it is computed based on average rate of change in emission of the last 10 years instead of modelling that takes into account a longer time period, extent of renewable energy capacity and use, additional carbon sinks, energy efficiency etc. of respective countries.'

➲ It said that both forests and wetlands of the country are crucial carbon sinks which have not been factored in while computing the projected GHG emissions trajectory up to 2050 given by EPI 2022.

➲ The principle of equity is given very low weightage in the form of the indicators like GHG emission per capita and GHG emission intensity trend.

➲ The CBDR-RC (Common But Differentiated Responsibilities and Respective Capabilities) principle is also barely reflected in the composition of the index.

➲ The indicators on water quality, water use efficiency, waste generation per capita which are closely linked to sustainable consumption and production are not included in the Index. The Index emphasizes the extent of Protected Areas rather than the quality of protection that they afford.

Biodiversity Indices:

➲ Management Effectiveness Evaluation of Protected areas and eco-sensitive regions is not factored into the computation of Biodiversity Indices.

➲ Again, the index computes extent of ecosystems but not their condition or productivity. Efforts must be made to include metrics that truly capture ecosystem productivity such that regulatory, provisioning as well as cultural services provided by various ecosystems like forests, wetlands, croplands are assessed and reflected in performance.

➲ It also pointed out that indicators like agro-biodiversity, soil health, food loss and waste are not included even though they are important for developing countries with large agrarian populations.

- India is party to Paris Agreement and has given a goal of NET ZERO by 2070 and hence comparing it to countries with projected 2050 emissions level in 2050 equal to or below zero receiving the maximum score is against the principle of Equity as enshrined in CBDR-RC.

Conclusion:

- The message embedded in India's poor score on net zero ambitionsis that the developing world must pay for the sins of the developed world. Indeed, appropriate climate responsibility would mean developed nations adopting net zero targets for much earlier than 2050.

REAL CURES FOR WATER WOES IN BUNDELKHAND REGION

Context:

- The Bundelkhand region is spread over 13 districts of Central India in two states (Uttar Pradesh and Madhya Pradesh).
- Resolving water shortages in numerous villages and towns has been the most discussed development challenge in recent years.

Aspects:

- This has involved two aspects: construction of large or medium dams on the one hand and undertaking decentralized, small-scale water conservation work on the other hand.
- However, the balance of resource availability has favoured big projects, even though the performance of several has been much below expectation and has involved the displacement of people as well as other serious adverse effects.

Scrapping ofthe Ken-Betwa Link:

- In more recent times, this debate has been reflected most in terms of arguing for a scrapping of the massive water-transfer project, the Ken-Betwa Link, and using the huge funds allocated to it for small-scale water conservation work, including water harvesting, increasing forest cover and improving pastures and grasslands.
- The debate has also intensified on whether over 2.3 million trees which are threatened by the Ken Betwa Link project can be saved.

Shortcoming of Ken Betwa Link project:

- The Central Empowered Committee of the Supreme Court had presented a strong critique of several aspects of this project.
- Several independent experts have also criticised the threat to many villagers as well as to the Panna Tiger Reserve. Additionally, the lack of clear evidence that surplus water still exists in the Ken to divert it to the Betwahas been questioned.
- It is clear to those involved with water issues that if Ken-Betwa project funds are instead spent on small-scale water conservation and rainwater harvesting projects, apart from repairing and improving existing traditional water systems, as well as on increasing green cover in various ways, it will make a huge contribution to resolving the water crisis of Bundelkhand.

Reasons for water crisis inBundelkhand:

- In the past, the water crisis in Bundelkhand has been attributed to deforestation, mismanagement and wrong priorities and not necessarily to inherent water shortage. It is important to remember that: Bundelkhand normally receives about 900 to 1000 mm. annual rainfall.
- Bundelkhand has a network of seven major rivers – Chambal, Sind, Betwa, Dhansan, Ken, Tons and Yamuna, and ten smaller rivers – Pahuj, Paisuni, Baghein, Sonar, Vyarma, Mahuar, Urmil, Lakheri, Jamni, Bina, and their numerous tributaries.
- This region had also been rich in traditional water collection sources.
- The rainfall is capricious and erratic in amount, pattern, intensity and distribution. Extreme deviations from the normal are quite common. About 90 per cent of the total rainfall is received during four months, July to September. The high intensity of rain hardly leaves any time for the water to infiltrate into the soil, and the deforestation has left little scope to capture the rainwater and transport it to ground-water levels.
- Among the regions to the south of the Himalayan Foothills, Bundelkhand has a larger share of rocky formation with slopy terrain. Because of the Vindhyan plateaus flanked by high steep cliffs, this region has an unusually high rate of water run-off gushing towards the north, creating deep gorges and rapids. This has meant greater problems of water retention.

Keeping in view these factors, the following solutions could work better for Bundelkhand:

Revival of Traditional Water Sources:

- In recent decades many traditional sources of water have suffered from neglect. Adequate resources should be made available for repair, cleaning and maintenance of traditional water sources.
- Notably, the reservoirs constructed at the foothills by the Chandelas between the ninth and thirteenth

centuries and by the Bundelas later, are still existing, partially fulfilling the need for irrigation and even drinking water in their respective areas.

➲ All these reservoirs seem to have been scientifically designed with the provision of spillways for surplus water. Some reservoirs are found to have been connected with canals which were used as recharging sources for the downstream irrigation wells and/or for irrigating the fields directly.

➲ In addition, check dams, weirs, barrages, wells, step-wells (bavdis) and artesian wells were constructed. Bundelkhand has, thus, a glorious tradition of reservoirs, tanks, ponds, wells, which have gone into disuse in certain parts of the region. Adequate efforts should be made to protect the traditional water sources and their catchment areas, whenever possible.

New Water-Harvesting Work:

➲ Learning from the traditional well-constructed structures which have lasted for so long, new tanks, check dams, field ponds and wells need to be created where feasible.

➲ In Patha or plateau areas, there is good scope for creating low-cost drinking water sources by tapping small natural springs and creating small well-like structures around them to keep the water clean.

➲ Contour bunding on gently sloping terrain.

➲ Construction of several water ponds with each of them being at least 8 meters deep. The surface area of each pond can vary from a tenth of a hectare to one or two hectares. They should be so located that each has a catchment area fifty to a hundred times its surface area.

➲ A depth of eight meters is necessary since the average evaporation over the Bundelkhand area is two to three meters of water per year. Water from some of these tanks can be pumped into deep wells as a method of recharging groundwater.

➲ Individual houses or housing complexes should have underground, cement-lined "reservoirs" into which the rainwater falling on the roofs of the buildings and the open spaces around them can be led through suitable closed pipes or channels.

➲ Shallow broad area percolation tanks should be used. Due to the heaviness of our rainfall, it is less penetrating in proportion to quantity than in those countries where much of it falls in a state of fine division. The rate of penetration over Bun- the delkhand area is likely to be 10 to 15 per cent of the monsoon rainfalls. Hence the need for special efforts to increase the groundwater recharge.

Protect Forests, Plant More Trees:

➲ As forests of this region have been badly depleted in recent years, there is a clear need to protect whatever is left and to plant many more trees.

➲ A massive effort for afforestation of the hills can be successful only with the close involvement of people.

➲ Mixed indigenous species should be planted, trying to mimic natural local forests as much as possible.

➲ Development of grasslands, as sources of fodder for cattle is necessary to prevent cattle grazing in the slopes of the hills. Grasslands, apart from providing fodder and contributing to the success of afforestation of hills, will help to soak of the rain and recharging groundwater.

Making use of Mangal Turbine:

➲ A farmer scientist of Bundelkhand Mangal Singh had invented the Mangal Turbine to provide a means of lifting water from streams without using diesel or electricity.

➲ The Maithani Committee appointed by the Rural Development Ministry, Government of India, as well as several officials and independent experts have praised this invention.

➲ Although this has wider relevance, as it was invented in the special conditions of Bundelkhand, its relevance is particularly high for the region.

Way Forward:

➲ If proper priorities are decided and adequate attention is given to these aspects, water scarcity can be tackled effectively and there is no real need for implementing costly and dubious projects like the Ken-Betwa Link.

UN FUNDS INSUFFICIENT TO HELP VICTIMS OF CLIMATE DISASTERS: OXFAM

Why in news?

➲ According to the recent report by Oxfam International, the United Nations cannot provide poor countries enough humanitarian relief to recover from climate disasters as rich donor countries are holding back their finances.

Lack offinancial support:

➲ UN requires eight times more financial support than 20 years ago to be able to provide humanitarian aid to low-income countries during climate-related disasters, in 2000-02, UN appealed for $1.6 billion as humanitarian aid.

➲ The appealed amount rose to an average of $15.5 billion in 2019-2021 an unprecedented 819 per cent increase.

➲ Rich countries have been able to deliver 54 per cent of the UN's appeals in the last five years, leaving a massive deficit of $28-$33 billion.

Countries most in need of climate finance

➲ The Oxfam report also pointed out that for every $2 needed for the UN's humanitarian aid, rich donor countries provide $1.

➲ This is despite the fact that the richest one per cent people on Earth are emitting twice as much carbon pollution as the poorest half of humanity.

- Afghanistan, Burkina Faso, Burundi, Chad, Democratic Republic of Congo, Haiti, Kenya, Niger, Somalia, South Sudan, and Zimbabwe are among the ten countries most in need of climate finance.
- Richer people are less exposed to climate risks and better able to weather disasters. They live in more secure places and have more assets to draw on.
- Poorer people have less protection and therefore experience greater loss and damage, which accumulates over time.

Vulnerability in low-income countries:

- People in low-income countries are most vulnerable to the impacts of climate-related disasters, be it droughts, floods or wildfires, as these disasters further exacerbate poverty and death affecting them disproportionately, various reports have showed.
- The latest Intergovernmental Panel on Climate Change (IPCC)'s sixth assessment reports made it evident that more climate-related disasters are in the offing and therefore climate change will escalate the loss and damage suffered by these marginalized communities.
- Besides the huge financial burden, loss and damage due to climate crisis encompass health, biodiversity and loss of indigenous knowledge, among gender issues and other related factors.

Cost of loss and damage:

- The economic cost of loss and damage by 2030 will rise to the range of $290-$580billion.
- Poor countries cannot be expected to foot the bill, and increasing aid is not alone the answer. Paying the cost of climate-driven loss and damages should be on the basis of responsibility, not charity.
- Rich countries, rich people, and big corporations most responsible for causing climate change must pay for the harm they are causing.

Way Forward:

- Oxfam called for the establishment of a facility to draw innovative sources of finance from rich countries, which was rejected by developed nations at the 26th Conference of Parties (CoP26) to the United Nations Framework Convention on Climate Change last year.
- At CoP27, governments should agree to make loss and damage finance a core element of the United Nations Framework Convention on Climate Change (UNFCCC)'s Global Stocktake.

STEPS TOWARDS GROWING SUSTAINABLY

Context:

- As India marks 75 years of independence in 2022, achieving economic growth with environmental sustainability and climate change mitigation have emerged as key challenges.
- The environmental impact of growth includes the increased consumption of natural resources, higher

levels of pollution, and the potential loss of ecological habitats.
- However, not all forms of growth cause damage to the environment and growth enabled with innovation can achieve the Sustainable Development Goals (SDGs).

Synchronisation of ease of doing business &normalisation of conformities:

- A business regulatory regime based on trust with effective regulations that protect the environment yet ensure growth requires a fine balancing act.
- The government has shown commitment to synchronising the ease of doing business and normalisation of conformities without compromising the natural resources and environmental conditions of the country.
- It has recently streamlined more than 25,000 compliance conditions to support ease of living and ease of doing business.
- Further, it has stressed that compliance systems must be based on trust by promoting self-assessment and effective internal control mechanisms.

UN STUDY POINTS TO DIFFICULTIES IN BREEDING CHEETAHS IN CAPTIVITY

Why in news?

- Cheetahs are "notoriously difficult to breed in captivity", a new study by CITES affiliated to the United Nations has found based on long time research on cheetah breeding in captive facilities in Africa.
- The study commissioned by the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES) will be discussed by countries in July in Geneva.

Why it matters more for India?

- The comprehensive study conducted by the CITES group of the International Union for Conservation of Nature (IUCN) with two other organisations comes at the time when India has decided to import 8-10 cheetahs from South Africa and Namibia for breeding in captivity in Madhya Pradesh's Kuno Palpur National Park.
- The first batch of cheetahs from the two countries are expected to reach Kuno by end of August.
- As of now, cheetah experts, two from South Africa and one from Namibia, are studying the changes made in the Kuno habitat for cheetah relocation and breeding.

Challenges before captive breeding in India:

- South Africa is the world's largest exporter of live cheetahs. Export of cheetahs from two breeding centres in South Africa are allowed for "commercial" purpose, although most of the export is reported for non-commercial zoo purpose. India is also getting cheetah from one of these centres.

● Looking at the ecology of Kuno and associated prey base, captive breeding of cheetahs may not be easy.

● In absence of certification for confident captive breeding, direction of the introduction programme for cheetah raises many pertinent questions. Translocation of cheetahs would be from one captive centre to another and there are many questions over whether they can ever be released into the wild.

● Female cheetahs are solitary and roam vast distances, whereas males defend smaller territories and mate when female pass through, creating breeding issues. The breeding rate among cheetahs is lower than other big cats, such as tigers and lions, the studies have pointed out.

● In addition, the cheetah's genes pose a challenge to their continued survival, with low rate of reproductive success, research has found. With fewer offspring, cheetah populations can neither grow nor adapt to changes in the environment, especially habitat change.

● Even the national action plan for cheetah translocation released in January 2022 hinted at the animal's low reproduction issues. The plan says the Kuno has current capacity to sustain 21 cheetahs in 15 years and 36 after 30-40 years.

Cheetah reintroduction in India: A timeline:

● More than 117 years after the project to rehabilitate lions from Africa failed, the government has readied an enclosure for cheetahs in the dry deciduous forest landscape of Kuno Palpur.

● In 1905, 10 lions were brought from Africa. Of them, seven reached, who were killed by local villagers. Kuno had lost all its lions by 1872 and cheetahs by early 1920s.

● In 2010, India embarked upon a new journey for reintroduction of the cheetah into the wild. The plan was to bring cheetahs from Africa and release them in wild to repopulate the cheetah population in the country. Kuno was selected as the habitat where the cheetahs could be relocated.

● However, the project got stuck as some wildlife activists moved the Supreme Court against the project, saying it was not feasible. The top court struck down the proposal, agreeing with the critics that

the survival of the cheetah in a changed ecological demography was difficult.

● However, in 2018, the Madhya Pradesh government revived the project, asking the court to consider the project afresh.

● The court agreed and, in 2020, appointed an expert committee headed by retired Indian Administrative Service officer, M K Ranjit Sinh, to examine the wildlife areas suitable for the cheetah.

● The committee in January 2021 selected Kuno National Park as first destination for the cheetah translocation project. The apex court gave its go-ahead.

PARIVESH 2.0:

● The Ministry of Environment, Forests, and Climate Change has instituted the mechanism for a faster and more transparent environmental clearance regime for developmental and industrial activities.

● PARIVESH 2.0 is a web-based, role-based workflow application that has been developed for online submission and monitoring of the proposals submitted for seeking environment, forest, wildlife, and Coastal Regulatory Zone (CRZ) clearances from central, state, and district authorities.

● It automates the entire tracking of proposals, which includes online submission of a new proposal, editing/updating the details of proposals and displaying their status at each stage of the workflow.

● The system has an efficient technology-driven workflow that minimises redundancies, a robust appraisal process, a reliable and validated database that encourages accountability and ease of doing business.

● The average time for granting environmental clearances (ECs) has reduced significantly from more than 150 days in 2019 to less than 90 days, and in some

of the sectors, even within 60 days. These efforts to streamline the tedious process of environmental clearances through digital intervention and transparent mechanism have been well received by the industry.

Exemption from environmental clearance:

➲ The ministry has proactively undertaken stakeholder consultations in the last 24 months and has issued various office memorandums, clarifications, guidelines, and amendments in the EIA notifications 2006, most recently in April 2022, where category and threshold limits of several projects were amended to accelerate production and developmental activities in line with Aatmanirbar Bharat and PLI schemes.

➲ The amendment provides for exemption of environmental clearance to several projects, including defence-related or border area projects, thermal plants up to 25 MW based on biomass, and expansion of terminal building of airport, basically for projects deemed as public utility works.

➲ The exemptions come with the condition that standard environmental safeguards for such projects would be followed by the agency executing such projects or by providing for environmental safeguards in the environmental management plan at the time of granting such clearances. The validity of environmental clearance to hydro-power and nuclear projects, among others, was extended.

Air pollution in India:

➲ In a recent survey by Smart Air, of the 25 most polluted cities in the world, nine are in India.

➲ The government has been making efforts to control industrial pollution, industries have been categorised as red, orange, green, or white based on pollution potential. The frequency of renewal of consent has been linked with the category to ease the burden.

➲ The real-time monitoring of industrial emissions and effluents is being carried out by Online Continuous Emission and Effluent Monitoring Systems (OCEMS) analysers for applicable parameters in an industry. In case of exceeding of prescribed standards, the web portal generates SMS alerts to concerned officials.

Way Forward:

➲ The Finance Minister, while presenting Budget FY23, referred to the Circular Economy transition. This aligns with waste management rules through which the Centre is strengthening the digital mechanism of Extended Producer Responsibility portals for plastic, e-waste, and battery waste as an environment protection strategy, making the manufacturer responsible for the entire life cycle of the product, especially for take-back, recycling, and final disposal.

➲ These amendments, the time-bound implementation of the compliance management regime, government action on green clearance conditions, self-regulation processes for the proponents, OCEMS, and many more will all act as key enablers for better facilitation of the overall vision of transforming the whole compliance process digitally.

➲ This will go a long way in enhancing the ease of doing business and reducing the cost of doing business as well as making Indian industry more sustainable in line with the demand of the times.

➲ The industry must continue to work with the government on ensuring sustainable and environmentally-aligned growth processes.

BIRD STRIKES AND HOW THEY CAN AFFECT FLIGHTS

Why in news?

➲ Recently, two bird strike incidents 1000-kilometre apart prompted the aviation regulator DGCA to shoot off a letter to airports across the country, asking them to strictly implement guidelines pertaining to wildlife hazard management.

➲ According to DGCA data, there were 1,466 bird strike incidents last year across Indian airports, a 27% increase from 2020. This translates to about 4 bird strike incidents per day.

What are bird strikes and what can happen as a result of a strike?

➲ Bird strikes are among the most common threats to aircraft safety, and they typically occur during the take-off or landing phases of a flight.

➲ Typically, when birds will collide with an aircraft's airframe, it is unlikely to cause significant problems for the pilots flying.

➲ But there are cases where the aircraft engine ingested the birds causing damage to the power plants. This can lead to a loss of thrust for the engine and cause manoeuvrability problems for the crew.

➲ In these cases, where a jet engine ingests a bird, procedures would generally call for pilots to get the plane on the ground at the closest airport.

➲ However, while most airframe bird strikes are not considered critical to air safety, if the collision has happened with a window or a windscreen resulting in cracking of the structure, pilots will look to land the plane as early as possible.

Could bird strikes be critical to air safety?

➲ Smaller planes would generally be more susceptible to the dangers of bird strikes than larger ones. Also, modern jetliners are built with a number of redundancies and common passenger aircraft like Boeing 737 or Airbus A320 are designed to safely land with even a single-engine.

➲ However, given that bird strikes mostly happen during take-offs and landings, these incidents could distract the pilots during what are highly critical phases of a flight that demand the complete attention of the crew.

What causes bird strikes?

➲ Bird and animal movement goes up around airports particularly during the monsoon season because of increased insect breeding in the nearby fields.

➲ In some cases, bird hits also happen at higher altitudes when a plane is cruising. These are more dangerous than the low-altitude hits given that they can cause rapid depressurisation of cabins.

➲ Other reasons for bird activity around an airfield could be the presence of landfills or waste disposal sites that attract a large number of birds.

Guidelines to keep birds at bay:

➲ The risk of bird hits at Patna airport, where the SpiceJet plane made the emergency landing, is higher due to the presence of an open abattoir and butcher shops around the airport.

➲ The Aircraft Rules 1937 prohibit dumping of garbage and slaughtering of animals in a way that could attract birds and animals within a 10 km radius of airports.

➲ Airports can employ various methods to keep birds away from their vicinity. The measures include trimming of grass, spraying of insecticide, frequent runway inspections, deployment of bird chasers, noise makers, reflective tapes, laser beam guns and regular garbage disposal.

➲ The DGCA also said that there should be no water concentration and open drains.

➲ Further, constant surveillance of the airports by their respective wildlife control units is necessary.

Way Forward:

➲ While pilots are trained in managing bird-strike events, clearly more needs to be done on ground by airport operators with the help of local authorities to reduce the occurrence of bird and animal strikes.

SINGLE-USE PLASTIC BAN IN INDIA

Why in news?

➲ The Centre has banned the use of 'single-use plastic' from July 1.

➲ The Ministry for Environment, Forest and Climate Change had issued a gazette notification in 2021 announcing the ban, and has now defined a list of items that will be banned.

➲ The manufacture, import, stocking, distribution, sale and use of following single-use plastic, including polystyrene and expanded polystyrene, commodities shall be prohibited with effect from the 1st July, 2022.

9 WAYS TO REDUCE PLASTIC IN YOUR SCHOOL

1. Hold an educational film screening or talk
2. Organise school, park, river and beach cleans
3. Stop selling plastic bottles, encourage reusables instead
4. Encourage less plastic in packed lunches
5. Choose reusables for the canteen and school events
6. Request that supplier deliveries are plastic-free
7. Rethink catering options to eliminate single-use plastic
8. Ditch the laminator, choose plastic-free displays
9. Share your successes, to inspire other schools too

What is single-use plastic?

➲ It refers to plastic items that are used once and discarded. Single-use plastic has among the highest shares of plastic manufactured and used from packaging of items, to bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

➲ The single-use plastics account for a third of all plastic produced globally, with 98% manufactured from fossil fuels. Single-use plastic also accounts for the majority of plastic discarded, all of which is burned, buried in landfills or discarded directly into the environment.

➲ On the current trajectory of production, it has been projected that single-use plastic could account for 5-10% of greenhouse gas emissions by 2050.

➲ India features in the top 100 countries of single-use plastic waste generation – at rank 94 (the top three being Singapore, Australia and Oman.

Items banned by CPCB:

➲ The items on which the Central Pollution Control Board (CPCB) have announced a ban are earbuds; balloon sticks; candy and ice-cream sticks; cutlery items including plates, cups, glasses, forks, spoons, knives, trays; sweet boxes; invitation cards; cigarette packs; PVC banners measuring under 100 microns; and polystyrene for decoration.

➲ The Ministry had already banned polythene bags under 75 microns in September 2021, expanding the limit from the earlier 50 microns. From December, the ban will be extended to polythene bags under 120 microns.

➲ The ban is being introduced in phases to give manufacturers time to shift to thicker polythene bags that are easier to recycle. While manufacturers can use the same machine for 50- and 75-micron bags, the machinery will need to be upgraded for 120 microns.

➲ According to the Plastic Waste Management Rules, 2016, there is also a complete ban on sachets using plastic material for storing, packing or selling gutkha, tobacco and pan masala.

How will the ban be enforced?

➲ The ban will be monitored by the CPCB from the Centre, and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly. Directions have been issued at national, state and local levels to not supply raw materials to industries engaged in the banned items.

➲ Directions have also been issued to SPCBs and Pollution Control Committees to modify or revoke consent to operate issued under the Air/Water Act to industries engaged in single-use plastic items. Local authorities have been directed to issue fresh commercial licenses with the condition that SUP items will not be sold on their premises, and existing commercial licences will be cancelled if they are found to be selling these items.

➲ Earlier, the CPCB issued one-time certificates to 200 manufacturers of compostable plastic and the BIS passed standards for biodegradable plastic.

➲ Those found violating the ban can be penalised under the Environment Protection Act 1986 – which allows for imprisonment up to 5 years, or a penalty up to Rs 1 lakh, or both.

➲ Violators can also be asked to pay Environmental Damage Compensation by the SPCB. In addition, there are municipal laws on plastic waste, with their own penal codes.

How are other countries dealing with single-use plastic?

➲ Earlier in 2022, 124 countries, parties to the United Nations Environment Assembly, including India, signed a resolution to draw up an agreement which will in the future make it legally binding for the signatories to address the full life of plastics from production to disposal, to end plastic pollution.

➲ Bangladesh became the first country to ban thin plastic bags in 2002. New Zealand became the latest country to ban plastic bags in July 2019. China issued a ban on plastic bags in 2020 with phased implementation.

➲ Eight states in the US have banned single-use plastic bags, beginning with California in 2014. Seattle became the first major US city to ban plastic straws in 2018.

➲ On July 2, 2021, the Directive on Single-Use Plastics took effect in the European Union (EU). The directive bans certain single-use plastics for which alternatives are available; single-use plastic plates, cutlery, straws, balloon sticks and cotton buds cannot be placed on the markets of the EU member states.

➲ The same measure applies to cups, food and beverage containers made of expanded polystyrene, and all products made of oxo-degradable plastic.

INCLUDE WETLAND CONSERVATION IN UPCOMING COP15, COP27: EXPERTS

Why in news?

➲ Experts from the Wetlands International, a global non-profit, in a new white paper suggested five global, science-based conservation efforts to protect and restore wetlands.

➲ The suggestions come in the run up to the 15th Conference of Parties (CoP15) to the Convention on Biological Diversity to be held in Montreal, Canada and the 27th Conference of Parties (CoP27) to the United Nations Framework Convention on Climate Change in Egypt in 2022.
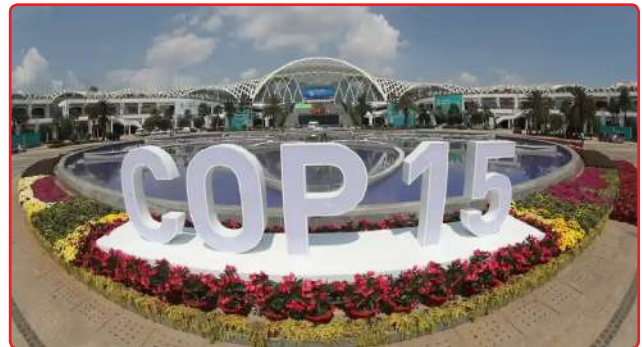
The five suggested targets to be achieved by 2030 include:

a) Remaining, undrained peatland carbon stores should be kept intact and 10 million hectares of drained peatlands need should be restored

b) Global mangrove cover of 20 per cent

c) Preservation of free-flowing rivers and flood plains, along with enhancement of restoring floodplain ecosystem and its function in the area

d) 10 per cent increase of west African river Volta in tidal flats area

e) Identification of 50 per cent of the 7,000 critically important sites along the flyways to be brought under favourable management.

Concerns:

➲ The actions are especially urgent since CoP15 was delayed four times and the planet is facing an ecological emergency with global destruction of biodiversity.

➲ At present the protection and restoration of wetlands remains unaccounted for in the global nature and climate agreements of the Global Biodiversity Framework, 2002.

Significance of wetlands:

➲ Wetlands are disappearing three times faster than forests. The wetlands account for just six per cent of

the plant but are home to 40 per cent of world's plant and animals.

- Every year, 200 new species are found in freshwater wetlands and are responsible for sequestering almost one third of the global soil carbon.

Roadmap for CoP15 to the Convention on Biological Diversity:

- The Convention on Biological Diversity must affirm specific targets on these ecosystems, to ensure affirmative actions are taken to restore and maintain the biodiversity.
- Negotiations at CoP15 will focus on achieving global biodiversity targets coinciding to protect 30 per cent land and sea,.
- The conventional discussions over landscape conservation revolve around reducing deforestation for carbon sequestration. The conservation efforts extend to the oceans for the same purpose. But such discussions fail to recognise the unique significance of wetlands that interface between the two, to mitigate carbon emissions.

Climate crisis mitigation:

- Destruction of mangrove forests results in 10 per cent of global CO2 emissions, but they still receive less attention than tropical forests.
- Similarly, peatlands which comprise just 3 per cent of the global land surface, hold 30 per cent of the total carbon stored on land, which is roughly twice the amount stored in the world's forests. Hence, wetlands play a key role in climate crisis mitigation globally.

Way Forward:

- The wetlands may comprise a minor portion of the planet, but are crucial parts of the ecosystem and are under tremendous pressure.

CEMENT CARBON DIOXIDE EMISSIONS QUIETLY DOUBLE

Why in news?

- Heat trapping carbon dioxide emissions from making cement, a less talked about but major source of carbon pollution; have doubled in the last 20 years, new global data shows.

Global data:

- In 2021, worldwide emissions from making cement for buildings, roads and other infrastructure hit nearly 2.9 billion tons (2.6 billion metric tons) of carbon dioxide, which is more than 7% of the global carbon emissions, according to Norway's CICERO Center for International Climate Research and the Global Carbon Project.
- Twenty years ago, in 2002, cement emissions were some 1.4 billion tons (1.2 billion metric tons) of carbon dioxide.

- China is key because it produced more than half of the world's cement emissions in 2021, with India a distant second at about 9%.
- The United States spewed 2.5% of the emissions from cement, ranking fifth behind Vietnam and Turkey.

Global cement emissions by China:

- Driven by China, global cement emissions globally have more than tripled since 1992, recently growing at a rate of 2.6% a year.
- It's not just that more cement is being made and used. At a time when all industries are supposed to be cleaning up their processes, cement has actually been going in the opposite direction.
- The carbon intensity of cement has increased 9.3% from 2015 to 2020, primarily because of China.

Emissions released during cement manufacturing:

- Cement is unusual compared to other major materials, such as steel, because not only does it require a lot of heat to make, which causes emissions, but the chemical process of making cement itself produces a lot of carbon dioxide, the major human-caused long-term heat-trapping gas.
- The recipe for cement requires lots of a key ingredient called clinker, the crumbly binding agent in the entire mixture.
- Clinker is made when limestone, calcium carbonate, is taken out of the ground and heated to 2700 to 2800 degrees (1480 to 1540 degrees Celsius) to turn it into calcium oxide. But that process strips carbon dioxide out of the limestone and it goes into the air.

Cement consumption:

- Cement, which is the key ingredient in concrete, is in buildings, roads and bridges.
- Each person on the planet is consuming on average more than a kilogram (2.2 pounds) of cement per day.

What needs to be done?

- Even though there are greener ways to make cement, cutting its emissions dramatically is so difficult and requires such a massive change in infrastructure and the way of doing business, the International Energy Agency doesn't envision the cement industry getting to zero carbon emissions by 2050.

➲ Instead there will still be emissions from cement, steel and aviation that need to be balanced out with negative emissions elsewhere.

➲ One of several ways to make greener cement is to mix in fly ash, which is a waste product from burning coal, in place of some of the clinker and he said there's more than enough fly ash available even with coal use reductions.

INDIA'S RIVERS ARE HEATING UP DUE TO CLIMATE CHANGE, SHOWS STUDY

Why in news?

➲ Climate change may turn India's rivers into hostile environments for aquatic life by 2070-2100, scientists warned in a new study.

➲ River water temperatures may increase during the period and dissolved oxygen levels may decrease.
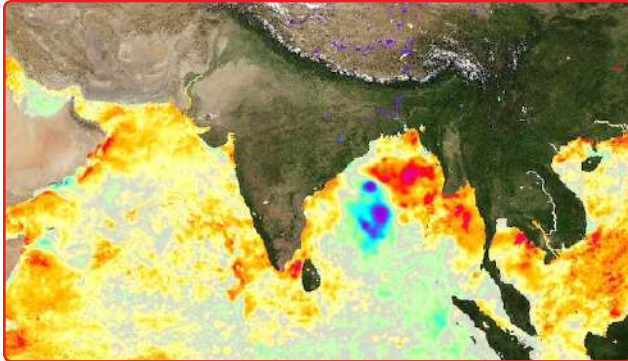
Key Highlights:

➲ Under a high-emissions scenario, average river water temperatures are expected to climb 7 degrees Celsius in summer, reaching close to 35°C by 2070-2100.

➲ An increase in air temperature aggravates river water temperatures.

➲ Dissolved oxygen levels can drop to 7.3 milligrams / litre of water from 7.9 mg / l at present under a high emissions scenario.

➲ Aquatic organisms use dissolved oxygen to breathe. But oxygen becomes less soluble in warmer and polluted waters. The riverine species cannot survive for long when the level of dissolved oxygen drops below 4-5 mg / l of water.

River basins studied:

➲ The study covered seven Indian basins: Ganga, Narmada, Cauvery, Sabarmati, Tungabhadra, Musi and Godavari.

➲ Currently, the average river water temperature varies between basins. For example, it is 30.34°C in Cauvery and 27.97°C in Musi.

Basis of study:

➲ They used computer-modelling to predict river water temperatures and dissolved oxygen levels across the seven basins.

➲ Using data on air temperatures, the team predicted the historical, present and future river water temperatures for each of the seven basins. This was then converted into dissolved oxygen levels.

Observations:

➲ The algorithm predicted that the summer river water temperature for the Cauvery, Godavari, Tungabhadra, Sabarmati, Musi, Ganga and Narmada basins are expected to increase by 0.5°C, 1.9°C, 3.1°C, 3.8°C, 5.8°C, 7.3°C and 7.8°C, respectively, from 2071-2100.

➲ The study only considered the impact of air temperature on river water temperature. But a nearby thermal plant, groundwater and pollutants can also create fluctuations.

➲ The dissolved oxygen levels for Cauvery, Godavari, Tungabhadra, Sabarmati, Musi, Ganga, and Narmada basins will likely rise by 0.1 per cent, 3.3 per cent, 5.3 per cent, 6.4 per cent, 5.8 per cent, 12 per cent and 12.5 per cent, respectively, for the same period.

Saturation level:

➲ Dissolved oxygen saturation levels can go down by 2-12 per cent during 2070-2100. The saturation level gives us an idea of the maximum limit of dissolved oxygen level a river water body can have.

➲ Saturation level, varies naturally with temperatures, pressures and salt levels. Each river will have its own saturation limit.

➲ For every 1°C increase in river water temperature, there will be about a 2.3 per cent decrease in dissolved oxygen saturation level concentrations over Indian catchments under climate signals.

➲ Saturation levels help define the maximum permissible limits and standards for various river usages, the researchers said, adding that this has not been assessed under climate change.

Limitations:

➲ The researchers acknowledge that the lack of data on river flow was a significant limitation of the study.

➲ Flow data may play a vital role in predicting river water temperatures and that low flows significantly impact the Indian rivers in the summer.

VITAMIN D3-RICH WEED AMONG 18 PLANTS STIFLING KAZIRANGA

Why in news?

➲ The Wildlife Institute of India has sought permission for a pilot project to check the expansion of the invasive plants threatening the rhino habitat.

➲ A vitamin D3-rich weed and shrub with roots are among 18 invasive plants stifling the Kaziranga National Park and Tiger Reserve, the best-knownfor the greater one-horned rhinoceros on earth.

Major threat:

➲ Kaziranga has had to deal with encroachment, poaching, and annual floods for decades. But none of

these has been as damaging to the health of the 1,300 sq. km tiger reserve as the invasive species that have gone under the radar until now.

- 18 of them are silently taking over the landscape at the cost of indigenous grasses, shrubs and trees the herbivores of the park sustain on.

What are Invasive Species?

- The Convention on Biological Diversity (CBD) defines invasive alien species (IAS) as "an alien species whose introduction and spread threaten ecosystems, habitats, or species with socio-cultural, economic and environmental harm and harm to human health".

- Invasive species alter the environment they invade and are difficult and expensive to control after they colonise a landscape, having phenotypic plasticity (the ability to adapt to environmental stress).

- Invasive plant species transform the soil structure and micro environment to their advantage by producing allelochemicals which cause the destruction of native species and local biodiversity.

Parthenium & lantana:

- The list submitted to the Wildlife Institute of India (WII) did not contain the "usual culprits" of many protected areas in India – parthenium and lantana that threaten more than 40% of India's tiger reserves.

- It did mention ipomoea (Ipomoea carnea) and mimosa (Mimosa himalaica) but marked them as largely controlled and not much of a worry now.

- Parthenium(Partheniumhysterophorus) is believed to have come to India as contaminants in a consignment of wheat imported from the U.S. in the 1950s while lantana (Lantana camara) was brought by the British as ornamental plants from South America two centuries ago.

Some invasive species in Kaziranga:

- Many like the Bombaxceiba and Largestroemia speciosa, trees locally called 'semul' and 'ejhar', need immediate attention to save the grasslands vital for the survival of the rhino and other herbivores.

- Bombaxceiba or semul, an invasive tree, is fast invading the grasslands of Kaziranga.

Invasive plants are fast clogging paths and grasslands:

- The herbivores usually avoid the invasive plants, which regenerate at an alarming speed and threaten to edge out the indigenous flora.

- Some of the invasive plants have a toxic impact on the landscape after remaining underwater, which is often for two months every monsoon.

Leeamacrophylla:

- Some weeds have herbal properties, but their toxicity outweighs their utility.

- For instance, wild boars love to gorge on the succulent rootlets of the Leeamacrophylla or 'kukurathengia' that is fast clogging the patrolling paths and grasslands.

Cestrum diurnum:

- Another "poisonous" invasive plant is the Cestrum diurnum or day-blooming jasmine of West Indies origin "coming up gregariously" on the Brahmaputra sandbars.

- The plant is otherwise a source of vitamin D3.

- Once the modalities are finalised, this weed can be turned into a commercial crop for the people in the vicinity ofKaziranga. Pharmaceutical companies need tonnes of dry leaves of this plant periodically.

Cane:

- Cane, too, is a commercial plant that is threatening to be an invasive plant in Kaziranga. Its growth has to be restricted to save the grasslands the herbivores survive on.

What's next?

- The Wildlife Institute of India sought permission for experimental culling, cutting, slashing, burning, uprooting and girdling of the invasive plants under the National Tiger Conservation Authority (NTCA).

- The WII had earlier advised the field director to weed out the invasive plants for the indigenous Kaziranga flora to breathe easier.

- NTCA has undertaken the management of invasive plants in other tiger reserves but this is the first time that such species have been identified with threat estimation.

ECO-SENSITIVE ZONES & PROTESTS IN KERALA

Why in news?

- Farmers in Kerala continue to protest across several high ranges of the state against the Supreme Court's recent order to establish 1-km Eco-Sensitive Zones around all protected areas, wildlife sanctuaries and national parks.

- The widespread unrest, which has hit districts like Idukki, Kottayam, Pathanamthitta and Wayanad, is borne out of the fear of farmers losing their livelihood, and has found support from the state government, opposition parties and the Catholic Church.

- Recently, the Union government said that it will hold discussions with the Kerala government and file an affidavit in the Supreme Court on the matter.

Eco-Sensitive Zones (ESZs)
Protests in Kerala Against ESZs

What are Eco-Sensitive Zones?

➲ As per the National Wildlife Action Plan (2002-2016), issued by the Union Ministry of Environment, Forest and Climate Change, land within 10 km of the boundaries of national parks and wildlife sanctuaries is to be notified as eco-fragile zones or Eco-Sensitive Zones (ESZ).

➲ While the 10-km rule is implemented as a general principle, the extent of its application can vary.

➲ Areas beyond 10-km can also be notified by the Union government as ESZs, if they hold larger ecologically important "sensitive corridors."

Why are Eco-Sensitive Zones created?

➲ According to the guidelines issued by the Environment Ministry on February 9, 2011, ESZs are created as "shock absorbers" for the protected areas, to minimize the negative impact on the "fragile ecosystems" by certain human activities taking place nearby.

➲ Furthermore, these areas are meant to act as a transition zone from areas requiring higher protection to those requiring lesser protection.

➲ The guidelines also state that the ESZs are not meant to hamper the daily activities of people living in the vicinity, but are meant to guard the protected areas and "refine the environment around them".

➲ To do so, the guidelines list the activities prohibited in an ESZ, such as commercial mining, saw mills, commercial use of wood, etc., apart from regulated activities like felling of trees.

➲ There are permitted activities like ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, among others.

What is the recent SC judgment that has caused an uproar in Kerala?

➲ In June 2022, a three-judge bench of the Supreme Court heard a PIL which sought to protect forest lands in the Nilgiris in Tamil Nadu, but was later expanded to cover the entire country.

➲ In its judgment, the court while referring to the 2011 guidelines as "reasonable", as reported by Live Law, directed all states to have a mandatory 1-km ESZ from the demarcated boundaries of every protected forest land, national park and wildlife sanctuary.

➲ It also stated that no new permanent structure or mining will be permitted within the ESZ.

➲ If the existing ESZ goes beyond 1-km buffer zone or if any statutory instrument prescribes a higher limit, then such extended boundary shall prevail.

Why are people protesting against it?

➲ Protests erupted across the high ranges of Kerala in response to the apex court's directions. Due to the high density of human population near the notified protected areas, farmer's groups and political parties have been demanding that all human settlements be exempt from the ESZ ruling.

➲ The total extent of the wildlife sanctuaries in Kerala is eight lakh acres. If one-km of ESZ is demarcated from their boundaries, around 4 lakh acres of human settlements, including farmlands, would come within that purview. This is a matter of sheer survival of lakhs of people.

➲ Before the SC judgment, the Kerala state government had stated during an expert committee meeting of the Union Environment Ministry in March that all human settlements should be excluded from the buffer zones.

➲ The Kerala state government had proposed that for some national parks, such as the Thattekad Bird Sanctuary, the extent of the ESZ area should be reduced from the proposed uniform 1-km, to an ESZ ranging from zero to 1 km in the eastern and south-eastern side of the national park.

➲ This was because the villagers occupying the densely populated settlements in these areas believed that the ESZ would restrict their agricultural and related activities.

Have similar protests taken place before in Kerala?

➲ This is not the first time that Kerala has faced such protests. In 2013, hartals first erupted in Idukki and Wayanad after the Kasturirangan committee report recommended that 60,000 km of the Western Ghats, covering 12 of Kerala's 14 districts, be notified as ecologically sensitive areas.

➲ Similar protests had taken place in Karnataka as well.In December 2021, the Karnataka Chief Minister said he opposed the decision to declare the Western Ghats as an ecologically sensitive zone, because it would "adversely affect the livelihood of the people in the region".

EXCESS & DEFICIT RAINFALL IN ASSAM 2022 MONSOON

Context:

➲ Assam received 1,891.9 mm of rainfall from March 1 to June 24, just 347.5 mm less than the annual precipitation the State receives.

➲ According to the India Meteorological Department (IMD), Assam's annual normal rainfall between 1961 and 2010 has been 2,239.4 mm.

- Many people have died since April. An arterial railway track linking southern Assam, Manipur, Mizoram and Tripura has been washed away, 55 lakh people have been affected across more than 5,000 villages.
- Meteorologists and climate change specialists attribute the high pre-monsoon and monsoon rains to several factors.

How has the monsoon been so far this year?

- India received 2% less rain in 2022than it usually does between June 1 and June 23 every year.
- The total rainfall was brought down by 34% over central India and 15% over peninsular India compared to the 32% more received by the east and northeast and 7% more by northwest India.
- According to the IMD, the rain deficiency is expected to be overcome by the first week of July.
- During the monsoons, whenever moisture-laden southerly or south-westerly winds from the Bay of Bengal hit the region's east-west oriented mountain ranges, Arunachal Pradesh, Assam, and Meghalaya receive more rainfall in comparison to other States of the north-eastern region.
- Meteorologists said the recent episode of heavy rainfall underlined the presence of the east-west trough in the lower levels of the atmosphere over the region and the incursion of large-scale moisture due to strong southerly and south-westerly winds from the Bay of Bengal.

What are the factors determining rainfall pattern?

- Assam, which receives rainfall beyond the June-September monsoon phase, does not always get above-normal or excess rain.But in 2022, according to the IMD, it received 41% above normal rainfall during the pre-monsoon season (March to May), and it has received 71% more than normal rainfall up to June 25.
- A 2018 study based on IMD data conducted by Pune-based Indian Institute of Tropical Meteorology revealed that the State had been witnessing a significant decreasing trend in the average monsoon rainfall since 1870 while experiencing sudden downpour days leading to frequent flooding.
- It found that the average rainfall deficiency was 5.95 mm per decade between 1981 and 2016. Assam's

valleys experience both excessive and insufficient rainfall from time to time "due to ecological and climate difference from one place to another".

Role of climate change & aerosols:

- Climate change is said to have increased the water and surface temperature of the Arabian Sea and the Bay of Bengal by up to 2 degrees, causing the frequent formation of low-pressure areas and cyclonic circulations, resulting in heavy rains.
- A recent study by the Indian Institute of Technology, Guwahati said aerosols, including black carbon, released by biomass burning, influence the western part of northeast India close to the Indo-Gangetic Plain the most.
- Rising black carbon emissions, leads to a decrease in low-intensity rainfall while pushing up severe rain in the pre-monsoon season in northeast India.

Was the monsoon late this year?

- The seasonal monsoon winds are an extremely complex and intricate combination of physical processes that operate not only in the atmosphere but also involve land and ocean.
- In India, June 1 is regarded as the date of arrival of the monsoon, which accounts for about 80% of the rainfall in the country.
- The monsoon landed early in Kerala, three days ahead of the normal date of June 1, but then it turned sluggish on its western branch's upward journey.
- But if central India suffered a deficit, the east and north-eastern parts battled a diametrically opposite problem leading to widespread floods in Assam and Meghalaya.

Monsoon rainfall pattern in India:

- Historically, June rainfall is patchy and contributes less than 18% of the total monsoon rainfall. The key monsoon months are July and August and they bring nearly two-thirds of the monsoon rains.
- The most important synoptic disturbances during the monsoons over India are disturbances (lows, depressions, etc.) that form mostly over the Bay of Bengal, move westwards or west north-westwards along the monsoon trough, and produce a large volume of rainfall.
- The other synoptic disturbance which affects monsoon rainfall significantly is the position of offshore trough or vortex along the west coast of India.
- Monsoon rainfall in India is known to be affected by global phenomena such as El Nino or La Nina — large-scale warming or cooling events of the sea surface. Other factors such as the Indian Ocean Dipole and Madden-Julian Oscillation also influence monsoon rainfall.

INDIA NEEDS TO PROMOTE AND FORM GREEN HYDROGEN CORRIDORS, SAYS NITI AAYOG

Why in news?

➲ Recently, NITI Aayog released a report titled 'Harnessing Green Hydrogen - Opportunities for Deep Decarbonisation in India'.

Key Highlights:

➲ It said India needs to form Green Hydrogen Corridors and governments can look at providing grants to startups as well as support entrepreneurs to promote green hydrogen.

➲ There is a need to facilitate investment through demand aggregation and dollar-based bidding for green hydrogen.

➲ The government can also use public procurement and purchase incentives (for green hydrogen) to create demand in niche markets and crowd in private investment.

➲ The government should promote export of green hydrogen and green hydrogen-embedded products through a global hydrogen alliance.
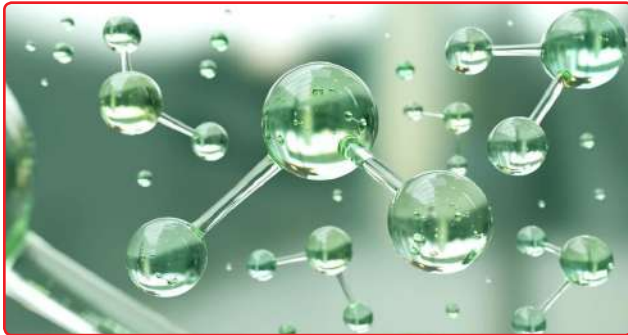
Green Hydrogen/ Green Ammonia:

➲ Green Hydrogen/ Green Ammonia is defined as hydrogen/ ammonia produced by way of electrolysis of water using renewable energy, including renewable energy which has been banked and the hydrogen/ ammonia produced from biomass.

➲ Most large economies including India have committed to net zero targets.

➲ Transition to green hydrogen and green ammonia is one of the major requirements for reduction of emissions, especially in the hard to abate sectors.

Hydrogen demand in India:

➲ The report predicted that hydrogen demand in India could grow more than fourfold by 2050, representing almost 10 per cent of global hydrogen demand.

➲ In the longer term, steel and heavy-duty trucking are likely to drive the majority of demand growth, accounting for almost 52 per cent of total demand by 2050.

Roadmap:

➲ Emphasising that the roadmap should also identify a timeline and scale of manufacturing support for electrolysers, it said India may aim for 25 GW of electrolysers by 2030, while also investing USD 1 billion in R&D to catalyse the development of commercial green hydrogen technologies across the value chain.

➲ It noted that radically improving the speed of regulatory clearances coupled with preferential treatment in public tenders will help catalyse local manufacturing.

➲ The report suggested that grand challenges, public-private venture capital and financing test bench infrastructure could be part of the R&D investments.

Way Forward:

➲ The report aims to serve as a key knowledge base for India's Green Hydrogen Policy discourse and private sector investment decisions.

PAYMENTS FOR ECOSYSTEM SERVICES (PES)

Context:

➲ Incentives for biodiversity protection and sustainable use include biodiversity-relevant taxes, fees, levies, tradeable permits, and Payments for Ecosystem Services (PES).

➲ Through these economic instruments, governments can affect both public and private financing flows for biodiversity.

Opportunity for biodiversity financing in India:

➲ Mobilisation of biodiversity finance through pesticide levies, admission fees to natural parks, hunting and fishing permit fees, and the trade-in energy-saving certificates has gained governmental support and political will, but the mobilisation of private and public finance for PES has lacked lustre.

➲ Lack of academic research, governmental support, and political will have vexed environmental economists.

➲ Despite a solid theoretical foundation and the ability to tether investments more directly to outcomes, the debate revolves around the same issues from two decades: monetisation of environmental benefits, lack of additionality (how much environmental service would have been provided without conditional payments), and so on.

Increasing ecosystem services

Potential of PES:

➲ PES is one way to conserve and increase ecosystem services. It works through the establishment of performance contracts.

➲ People who can help provide the desired ecosystem service are rewarded based on their actions, or the quantity and quality of the services themselves.

➲ PES presents a unique scope for incentivising local land stewards to manage threatened ecosystems.

➲ It has the potential to achieve the dual goals of conservation and poverty alleviation towards the achievement of Sustainable Development Goals. This places PES as one of the pivotal economic instruments for conservation.

PES implementation globally:

➲ PES has not achieved much attention either in the research or policy mandate in the Indian subcontinent.

➲ This is in sharp contrast to the successful implementation of PES in Latin American and African countries. In the Western Cape, South Africa, the CapeNature Stewardship Programme protects biodiversity on private lands.

➲ Kitengela, Kenya's Wildlife Conservation Lease Programme, maintains open areas for wildlife and grazing on personal grounds.

➲ In terms of raising money, PES programmes such as Costa Rica's Pago PorServicios and Ecuador's Socio Bosque were among the few to mobilise significant finances.

Successful implementation:

➲ A research paper argues that any successful PES programme is one that overcomes the impediments to implementation.

➲ Such limitations include a solid institutional mechanism capable of simultaneous transfer of funds from buyers to suppliers, monitoring through investment in local capacity building, cost efficiency, the scope for development benefits, and maintaining the sustainability of funds.

➲ A local monitoring mechanism is the key to successfully implementing a PES programme.

➲ A study conducted in the Kodagu district of Karnataka to restore native trees that grow in the understory of coffee plantations shows a successfully designed local institutional mechanism for PES implementation.

➲ However, the PES mechanism is yet to be implemented or even tested for efficacy. The results of such studies offer support for potential research funding in restoration financing.

Impact evaluation:

➲ Impact evaluation studies that evaluate financial instruments' performance in attaining biodiversity are also important.

➲ The OECD (2019) Biodiversity: Finance and the Economic and Business Case for Action highlighted the importance of evaluating financial instruments' performance in attaining biodiversity goals.

➲ According to recent OECD research, few thorough impact evaluation studies have been done for terrestrial biodiversity and fewer for ocean/marine biodiversity.

➲ The OECD advocates comprehensive impact evaluations and the formulation of strategic criteria to help determine which policies or initiatives warrant more scrutiny.

Way Forward:

➲ Additionally, a strong policy thrust, such as the TEEB India Initiative highlighting the economic consequences of the loss of biological diversity, would help prioritise ecosystem restoration financing through a direct approach.

➲ A global initiative such as the United Nations Environment Programme Finance Initiative to mobilise private sector finance to benefit people and the environment would help maintain the funds.

➲ The cheapest way to receive anything you desire is to pay for it directly. This would allow the country to effectuate the nation's commitments to achieving the 2030 agenda for sustainable development and the Paris Agreement on climate change.

SOCIAL ISSUES

TAKING STEPS TO ENSURE SEX WORKERS' RIGHTS

Why in news?

➲ Recently, in Budhadev Karmaskar v. State of West Bengal &Ors, while issuing interim directions to States and Union Territories, the Supreme Court re-asserted that sex workers and their children cannot be deprived of their right to live with dignity and human decency.

Directives by Supreme Court:

➲ The court said that notwithstanding the profession, every individual in this country has the right to a dignified life.

➲ The court's directions are nothing but the recommendations made by the panel constituted by the Supreme Court in July 2011 and headed by a senior advocate, Pradip Ghosh, with regard to "conditions conducive for sex workers who wish to continue as sex workers to live with dignity in accordance with the provisions of Article 21 of the Constitution of India".

Enforcing directives:

➲ Since the Government of India had certain reservations about four of the 10 recommendations of the panel, the court directed the government to

implement the other six recommendations as well as the provisions of the Immoral Traffic (Prevention) Act (ITPA) of 1956.

➲ To provide immediate medical assistance to sex workers who are victims of sexual assault

➲ To release adult sex workers detained in ITPA protective homes against their will

➲ To sensitise the police and other law-enforcement agencies about the rights of sex workers to live with dignity

➲ To ask the Press Council of India to issue guidelines to the media so that they don't reveal the identities of sex workers while reporting on arrest, raid and rescue operations

➲ To not consider health measures that sex workers employ for their safety (such as condoms) as evidence of commission of an offence

➲ To ensure that the legal service authorities of the Central and State governments educate sex workers about their rights vis-à-vis the legality of sex work

Concerns:

➲ A provision is already available in the Code of Criminal Procedure (CrPC) on providing medical assistance to sex workers who are victims of sexual assault.

➲ However, the law is silent about not revealing the identity of sex workers. Similarly, though an order to send the sex worker to a protective home is passed by a magistrate after due inquiry about her need of care and protection, the ITPA and CrPC may be amended suitably to enforce the directions of the Supreme Court. Other directions may be implemented through executive orders by the governments.

Wider implications:

Appropriate amendment for multiple interpretations:

➲ One of the recommendations which the Central government expressed reservation about is of preventing the police from taking any criminal action against a sex worker who is an adult and is participating with consent, on the basis of 'age' and 'consent'.

➲ The expression 'sex worker' is not defined in the ITPA or any other law. According to the ITPA (as amended in January 1987), 'prostitution' means the sexual exploitation or abuse of persons for commercial purposes.

➲ Therefore, the expression 'prostitution' is not just confined to offering the body to a person for promiscuous sexual intercourse for hire (as per the definition before 1987); taking unjust and unlawful advantage of trapped women for one's benefit or sexual intercourse has been brought within its frame.

➲ The word 'abuse' also has a wide meaning. It implies that being an adult sex worker who is a sex worker voluntarily is not an offence per se, until exploitation or abuse is reported by her or revealed during investigation.

➲ It will therefore be appropriate to define 'sexual exploitation' and 'abuse of persons' as well, through an amendment, to rule out multiple interpretations and possible misuse by the enforcement agencies, particularly if offering one's body with consent for consideration is kept out of the criminal framework.

Brothel is unlawful or not?

➲ Another recommendation that the government has reservations about notes that since voluntary sex work is not illegal and only running a brothel is unlawful, sex workers should not be arrested or victimised during any raid in the brothel.

➲ According to the ITPA, 'brothel' includes any place which is used for purposes of sexual exploitation or abuse for the gain of another person or for the mutual gain of two or more sex workers.

➲ What if willing sex workers have no complaint against the brothel owner or manager? Therefore, the government would need to decide as a policy whether the act of two or more sex workers living together for mutual gain and being managed by themselves or by anyone else is to be criminalised or not. This may require wider deliberations to take a considered viewpoint.

Child of a sex worker or minor rescued from a brothel:

➲ The third recommendation says that no child of a sex worker should be separated from the mother merely on the ground that the mother is in the sex trade. If a minor is living in a brothel or with sex workers, it should not be presumed that he/she has been trafficked.

➲ Though the law does not mandate separation of the child from the mother (sex worker), it presumes trafficking if a child is found with any person in a brothel.

➲ Also, if a child or a minor is rescued from a brothel, the magistrate may place him or her with any child care institute recognised under the Juvenile Justice Act.

➲ In Gaurav Jain v. Union of India (1997), the Supreme Court had held that children of sex workers ought not to be allowed to live in brothels, and reformatory homes should be made accessible to them. Therefore, keeping in view the child's welfare, a suitable amendment may be made to accommodate the Supreme Court's direction.

Role of sex workers in decision making:

➲ The fourth recommendation requires the government to involve sex workers or their representatives in the process of decision-making or in the process of drafting reforms in laws relating to sex work.

➲ As the purpose of this exercise is to rehabilitate sex workers and improve their living conditions, their involvement in decision-making will surely make the reforms more enforceable.

Why allow sexual exploitation?

➲ It is noteworthy that carrying on sex work outside the notified areas or outside a distance of 200 metres of any place of public religious worship, educational institution, hospital, etc. is not punishable under the ITPA.

➲ The irony is that when the essential ingredient of sex work is 'sexual exploitation' or 'abuse of persons' for commercial purpose, how can this be allowed anywhere? Therefore, now with the court's directives on the anvil, it will be apposite for the government to differentiate between prostitution and the work of sex workers and consider banning prostitution per se and allowing voluntary sex work with certain conditions keeping in mind the public interest.

Way Forward:

➲ It is not disputed that women in the flesh tradeshould be viewed more as victims of adverse socioeconomic circumstances rather than as offenders. However, with all our laws and policies, we as a society have failed to contain prostitution.

➲ Therefore, the government may now use the Supreme Court's directions as an opportunity to improve the conditions of sex workers and their surrounding environment, facilitate rehabilitation, and remove the various ambiguities and inconsistencies in the applicable laws and bring about clarity.

SPAIN'S 'ONLY YES IS YES' BILL TO COUNTER ALL FORMS OF SEXUAL VIOLENCE

Why in news?

➲ Recently, the Congress of Deputies, Lower House of Spain's Parliament voted to approve a Bill that makes consent a key factor in sexual assault cases.

➲ The Comprehensive Guarantee of Sexual Freedom Bill was led by Irene Montero, the Equality Minister of Spain. Preparation of the Bill had been under way for two years, and the Council of Ministers approved its referral to the Parliament in July 2021.

About Comprehensive Guarantee of Sexual Freedom Bill:

➲ The Comprehensive Guarantee of Sexual Freedom Bill, popularly known as "only yes is yes" or "Ley sólosíessí" in Spanish, frees victims from having to prove that violence or intimidation was used against them.

➲ It defines consent as an explicit expression of a person's will—silence or passivity does not count as consent. Under the draft law, non-consensual sex can be considered aggression and perpetrators can be subject to imprisonment for up to 15 years.

➲ The Bill was approved by 201-140 votes with three abstentions in the Lower House. The Bill now awaits the approval of the Senate.

What are the highlights of the Bill

➲ The draft law eliminates the legal distinction between 'sexual assault' and 'sexual abuse'. It classifies all behaviours that violate sexual freedom without the consent of the other person as sexual assault.

➲ The Bill notes that sexual violence is one of the most common forms of human rights violations committed in Spain and disproportionately affects women and girls.

➲ The Bill also brings female genital mutilation, forced marriage, harassment with sexual connotations, and trafficking for the purpose of sexual exploitation within the ambit of sexual violence.

➲ It details the availability of care and guidance for victims of sexual assault, including legal assistance, medical and psychological care, and economic and other needs.

➲ Once the law is enacted, 24-hour crisis centres will be set up to provide support and assistance in crisis situations for victims and their family members. The Bill also says minors who commit sexual crimes have to undergo sex education and gender equality training.

➲ Under the proposed law, any person who addresses another person with "expressions, behaviours or propositions of a sexual nature that create an objectively humiliating, hostile or intimidating situation for the victim, without constituting other more serious crimes", will be liable to a penalty.

What prompted the discussion on sexual violence?

➲ Spain's La Manada rape case is considered to be the primary reason that indicated the need for a law like the Comprehensive Guarantee of Sexual Freedom.

➲ In 2016, an 18-year-old girl was gang-raped in Pamplona at the start of the San Fermin bull-running festival. The defendants argued that the woman never said "no" during the act, while the woman said that she was paralysed by fear.

➲ The men were instead found guilty of sexual abuse, which is a "lesser offence" according to current law, and sentenced to nine years in prison. The verdict sparked massive protests across the country.

➲ The ruling was overturned by the Supreme Court of Spain in 2019, and the five accused were sentenced to 15 years in prison on rape charges.

Spain's stand on International guidelines regarding sexual violence

➲ Non-consensual sexual acts are defined as rape under the Council of Europe Convention on preventing and combating violence against women and domestic violence, commonly known as the Istanbul Convention. Spain has signed and ratified it. Article

36 of the Istanbul Convention urges signatories to criminalise non-consensual sexual acts.

- Spain is also a signatory to the Convention for the Elimination of All Forms of Discrimination against Women of the United Nations (CEDAW), and the Council of Europe Convention on Combating Trafficking in Human Beings (Warsaw Convention).

RECOGNISING THE 'COMPULSORY' WOMAN WORKER

Context:

- The Centre for Monitoring Indian Economy (CMIE) reported that the labour participation rate of rural women was 9.92% in March 2022 compared to 67.24% for men. This is a cause for concern.
- According to CMIE, millions who left the labour market stopped looking for employment "possibly too disappointed with their failure to get a job and under the belief that there were no jobs available".

Phenomenon of discouraged workers:

- In countries like the U.S., Canada and Australia, such workers who are willing to work but give up searching for work for various reasons are called 'discouraged workers' and they are included in the unemployed category.
- This phenomenon, not captured in India by any official labour force surveys, is wrongly described as women "dropping out" or "leaving the labour market" giving the impression that this was a choice made by them, whereas, actually, women are pushed out of employment. The CMIE provides valuable inputs for urgently required government intervention in rural India.
- Ground-level realities are worse than what the CMIE suggests and what the government denies. Women who belong to landless households or with meagre landholdings cannot afford the luxury of being "discouraged." These are the "compulsory" workers.

Women do a lot of **unpaid care work** at home: they cook and clean and take care of the sick and in case they have children, they are often the parent doing the bulk of raising them. This is on top of working full time jobs in the public sphere. **Unpaid care work needs to be recognized as billable labour.**

The depths of distress:

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) sites are probably the best places to understand the compulsions of millions of women to work.

Case study of compulsory workers in India:

- One particular project in Kalaburagi district focuses on creating more than 200 percolation ponds, which are designed to address the declining levels of ground water and to help recharge wells. This project provides a few workdays to an estimated 300 workers from four villages.
- The soil is hard and dry and the project stretches over several kilometres. The women, who outnumber the men, work in women-only pairs. They dig and lift the mud.
- In the searing heat, they have to dig a 10X10X1 tank in a day. An assistant to the officer-in-charge estimated that because the soil is hard and stony, this would mean digging and lifting about 3,000 kg of mud a day. Since most of these women are unable to complete this task, they do not get the piece rate of ₹309; they get only ₹280 to ₹285.
- There was no crèche at the site. There was no water, so women took turns to walk a kilometre to a water source to fill their two-litre bottles.
- But despite the difficult conditions, every worker on the site complained about getting only about 40 days of work in a year. They wanted more as they regard MGNREGA work as their savior. The fact that they want to do more of this punishing work reveals the depths of the distress of poor rural households.

Other odd jobs:

- During the agricultural season, all the women worked on the lands of others, earning around the same as on the MGNREGA site. But the mechanisation of agricultural operations has drastically decreased workdays to less than three months a year.
- Many women therefore become part-time construction workers. They are hired by a network of "mistries" working for contractors. They migrate to construction sites for a few months, with their families or with other women from the village.
- So, going by the anecdotal evidence of women at a MGNREGA site, an individual woman in the course of a year is a MGNREGA worker, an agricultural worker, a construction worker, a migrant worker, a self-employed street vendor, a tailor, an odd job domestic worker, and a home-maker doing multiple domestic chores.

Providing minimum wage:

- Almost every woman spoke of being trapped in debt. What the women earn from multiple tasks for which there are no fixed piece rates is in no way equal to the amount of labour they do.
- The dismantling of labour laws in urban areas has weakened labour departments. Implementation of minimum wage in rural India is conceivable only with strong movements of agricultural workers' unions. While there should be strict implementation of minimum wages with piece rates fixed for different types of women's labour, it is unfair that landless manual labourers in rural India are denied the pitiful

government annual cash transfer of Rs. 6,000 given to land-owning farmers.

➲ While rural labourers should also be entitled to a similar cash transfer, the schedule of rates for women at MGNREGA projects based on impossibly high productivity rates must be lowered and the work sites made more worker-friendly.

Way Forward:

➲ With the deep penetration of capitalist processes in rural India, there is a crisis of livelihood options. Poor women adopt various strategies to deal with it.

➲ The invisibility of women's work can be addressed through time use surveys.

➲ The village-level time use surveys done by the Foundation for Agrarian Studies, for instance, revealed the extent of women's work. In fact, widespread surveys of poor rural women and how they spend their time are an urgent necessity.

➲ The 'compulsory' woman worker must be recognised and protected by laws and policies that address her issues, while India celebrates the 75th year of Independence.

SCIENCE AND TECHNOLOGY

WHY NEPTUNE AND URANUS APPEAR IN DIFFERENT COLOURS

Context:

➲ Neptune and Uranus have much in common, they have similar masses, sizes, and atmospheric compositionsyet their appearances are in different shades of blue.

➲ At visible wavelengths, Neptune is a rich, deep azure hue, while Uranus is a distinctly pale shade of cyan. Astronomers now have an explanation for why the two planets are different colours.
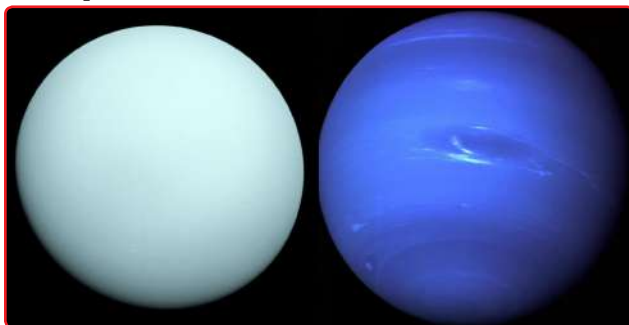
New model:

➲ Previous studies of the spectrum of each planet concentrated on individual wavelength regions.

➲ In the new comparison, researchers have developed a single atmospheric model that matches observations of both planets from the NASA/ESA Hubble Space Telescope, as well as the Gemini North telescope and the NASA Infrared Telescope Facility.

➲ The model shows that the haze around Uranus is thicker than that around Neptune.

Key Observations:

➲ Uranus's stagnant, sluggish atmosphere and makes it appear a lighter tone than Neptune.

➲ If there was no haze in the atmospheres of Neptune and Uranus, both would appear almost equally blue as a result of blue light being scattered in their atmospheres.

➲ The model leading to this conclusion describes three aerosol layers in the atmospheres of Neptune and Uranus.

➲ The key layer that affects the colours is the middle layer, which is a layer of haze particles that is thicker on Uranus than on Neptune.

Turbulence in Neptune's atmosphere:

➲ On both planets, methane ice condenses onto the particles in this layer, pulling the particles deeper into the atmosphere.

➲ Because Neptune has a more active, turbulent atmosphere than Uranus does, the team believes Neptune's atmosphere is more efficient at churning up methane particles into the haze layer.

➲ This removes more of the haze and keeps Neptune's haze layer thinner than it is on Uranus, with the result that the blue colour of Neptune looks stronger.

WHAT ARE THE HEALTH MINISTRY GUIDELINES ON MONKEYPOX?

Why in news?

➲ India's Health Ministry has issued guidelines on the management of monkeypox disease.

➲ So far, no cases of the virus have been confirmed in India but reports of the virus' spread in non-endemic countries have led to guidelines being issued.

What do the guidelines say?

➲ The 23-page document is an information sheet that lists out the global prevalence of the disease, its epidemiology or disease characteristics including the kind of virus that causes the disease, its likely origins, incubation period, how long before symptoms manifest and so forth.

⮑ It also highlights how long it takes to subside, modes of transmission, symptoms, the probable modes of exposure, the test to confirm the presence of the virus, the government's surveillance strategy in place to identify cases and clusters of infection.

What are the most important recommendations?

⮑ The guidelines recommend that contacts be monitored every day for the onset of signs/symptoms for a period of 21 days (as per case definition) from the last contact with a patient or their contaminated materials during the infectious period.

⮑ Suspected cases of monkeypox include a person of any age with a history of travel to affected countries within the last 21 days and presenting an unexplained acute rash and one or more of symptoms, including swollen lymph nodes, fever, head/body ache and profound weakness.

⮑ Other symptoms include pain in the eye or blurring of vision, shortness of breath, chest pain, difficulty in breathing, altered consciousness, seizure, decrease in urine output, poor oral intake and lethargy.

⮑ A case of monkeypox is confirmed in a laboratory by detection of unique sequences of viral DNA either by polymerase chain reaction (PCR) and/or sequencing, much like a test for COVID-19.

Tests & Treatment:

⮑ However, there are no commercial tests for monkeypox yet and all clinical specimens are to be transported to the apex laboratory of the ICMR-NIV (Pune) routed through the Integrated Disease Surveillance Programme (IDSP) network of the respective district/State.

⮑ There is no treatment protocol or medicines specific to monkeypox and a patient has to be managed on the basis of the symptoms they present. For instance, dehydration ought to be treated with oral fluids; fever with sponging and paracetamol, nausea and vomiting with antiemetics.

How prevalent is monkeypox globally?

⮑ The World Health Organization has said that cases of monkeypox have been reported from 12 member states that are not endemic for monkeypox virus. Reported cases thus far do not have established travel links to endemic areas.

⮑ To date, all cases whose samples were confirmed by PCR testing have been identified as being infected with the West African clade of the virus.

⮑ The genome sequence from a swab sample from a confirmed case in Portugal, indicated a close match of the monkeypox virus causing the current outbreak, to exported cases from Nigeria to the U.K., Israel and Singapore in 2018 and 2019.

⮑ Countries where the virus was endemic are, according to the WHO, Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Ghana (identified in animals only), Ivory Coast, Liberia, Nigeria, the Republic of the Congo, Sierra Leone, and South Sudan.

Are there vaccines?

⮑ Historically, vaccination against smallpox had been shown to be protective against monkeypox. While one vaccine (MVA-BN) and one specific treatment (tecovirimat) were approved for monkeypox, in 2019 and 2022 respectively, they aren't widely available.

⮑ A vaccination with small pox is said to be protective against monkeypox but this vaccine would be in individuals over 40-50 years of age, who've been inoculated with the small pox vaccine and here too it's unclear how long lasting the protection is.

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eVTOL

Why in news?

⮑ The Government of India is exploring the possibility of inviting manufacturers of Electric Vertical Take off and Landing (eVTOL)aircraft to set up base in India.

⮑ India is in 'conversation' with a number of eVTOL producers — the implication being a futuristic vision for India.

What is eVTOL?

⮑ As the acronym suggests, an electric vertical take-off and landing (eVTOL) aircraft is one that uses electric power to hover, take off, and land vertically.

⮑ Most eVTOLs also use what is called as distributed electric propulsion technology, which means integrating a complex propulsion system with the airframe.

⮑ There are multiple motors for various functions; to increase efficiency; and to also ensure safety. This is technology that has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies and also fuelled by the need for new vehicle technology that ensures urban air mobility (UAM). Thus, eVTOL is one of the newer technologies and developments in the aerospace industry.

⮑ eVTOLis a "a runway independent technological solution" for the globe's transportation needs. This is because it opens up new possibilities which aircraft with engines cannot carry out in areas such as manoeuvrability, efficiency and even from the environmental point of view.

⮑ There are an estimated 250 eVTOL concepts or more being fine-tuned to bring alive the concept of UAM. Some of these include the use of multi-rotors, fixed-wing and tilt-wing concepts backed by sensors, cameras and even radar.

⮑ eVTOLs have been likened to "a third wave in an aerial revolution"; the first being the advent of commercial flying, and the second, the age of helicopters.

Why are the developments in powering eVTOLs?

➲ The roles eVTOLs adopt depends on battery technology and the limits of onboard electric power. Power is required during the key phases of flight such as take off, landing and flight (especially in high wind conditions).

➲ There is also the important factor of weight. BAE Systems, for example, is looking at formats using a variety of Lithium batteries. Nano Diamond Batteries is looking at "Diamond Nuclear Voltaic (DNV) technology" using minute amounts of carbon-14 nuclear waste encased in layered industrial diamonds to create self-charging batteries.

➲ There are some industry experts who are questioning the use of only batteries and are looking at hybrid technologies such as hydrogen cells and batteries depending on the flight mission.

➲ There is even one that uses a gas-powered generator that powers a small aircraft engine, in turn charging the battery system.But whatever the technology, there will be very stringent checks and certification requirements.

What are the challenges?

➲ As the technology so far is a mix of unpiloted and piloted aircraft, the areas in focus include "crash prevention systems".

➲ These use cameras, radar, GPS (global positioning system) and infrared scanners. There are also issues such as ensuring safety in case of powerplant or rotor failure.

➲ Aircraft protection from cyberattacks is another area of focus.

➲ A third area is in navigation and flight safety and the use of technology when operating in difficult terrain, unsafe operating environments and also bad weather.

How did it begin?

➲ There is general agreement that the eVTOL world is moving forward based on the spark provided by NASA researcher Mark D. Moore who came up with the concept of a personal (one man) air vehicle while working towards his doctorate.

➲ Called the "Puffin" and thought of in 2009-10, it was about four metres tall and with a wingspan of 4.4 metres.

➲ It had 60hp electric motors that powered two propellers. Its other specifications included a four-point landing gear, a weight of 272kg, 45kg of batteries, a pilot payload of about 90kg, fetching it a total weight of 407 kg.

➲ Its top speed was under 245 kmph with a range of about 80km. A prototype was unveiled in 2010 and the concept was discussed at a conference on aeromechanics in 2010.

Are there any big players now?

➲ Since then there have been a number of ideas by industry, such as the Volocopter VC1 from Germany and the Opener BlackFly from the U.S.

➲ The top aircraft manufacturers, Airbus and Boeing, have also joined the race.

➲ Airbus unveiled its prototype, Vahana Alpha One or the Airbus Vahana (from the Sanskrit Vahana), at the Paris Air Show in 2017. It was pitched as a "cost-comparable replacement for short-range urban transportation" based on a fan-run tilt-wing design.

➲ A company, Lilium, started in 2015, which claims to be the "developer of the first all-electric vertical take-off and landing eVTOL jet", says that it is moving towards developing prototypes "designed to extract over 100kW of power from a system weighing just over 4kg" which gives an idea of the advancements.

High Precision Motor on FPGA
OPAL-RT provides high accuracy allowing engineers to mimic real motor phenomena and duplicate several types of faults to cover a maximum of test cases.

eVTOL Charger
OPAL-RT's optimized solvers make it possible to simulate the fast switching power electronics circuitry (at full frequency) found in vehicle charging equipment.

Communication Protocols
OPAL-RT simulators emulate industry-standard communication protocols such as CAN, CAN-FD, FlexRay, LIN, and others.

Multiple Motors Configuration
Easily scale from single motor to multiple motor powertrain configurations, allowing for system-wide coupling and faulting analysis.

Battery Management System (BMS)
OPAL-RT's flexible BMS solution makes it possible to control every aspect of your BMS system, and integrate new technology as soon as it is introduced into the vehicle.

PHIL Simulation to Test Power Components
Power Hardware-in-the-Loop (PHIL) simulation enables full power testing of battery packs, traction inverters, and converters.

AI and Autonomous Guiding
From data fusion and deep learning to new sensors such as cameras, RADAR or LIDAR; integrate each new technology as it is introduced to the vehicle.

- Its Lilium Jet theory has been designed for concepts such as private flights, six-seater passenger flights, or no seating for the zero-emissions logistics market.
- China, Israel and the U.K too have programmes to look out for.

What about certification?

- Some companies have concepts that are aimed at dual certifications by regulatory agencies in the western world. In March this year, the Federal Aviation Administration (FAA) and the United Kingdom Civil Aviation Authority announced being engaged in discussions focused on "facilitating certification and validating new eVTOL aircraft, their production, continued airworthiness, operations, and personnel licensing".
- Both bodies also highlighted the need to maintain very high safety standards. Further to this, eVTOL technology is to use existing regulatory frameworks despite being in the form of new and emerging technologies.
- The FAA has clarified that it plans to certify eVTOLs as powered-lift aircraft (an existing category) but in future, "develop additional powered-lift regulations" for innovation in operations and pilot training. It plans to use a "special class" process in 14 CFR 21.17(b) to oversee the unique features of emerging powered-lift models.
- EVTOL certification is also complex because of planned operations within urban areas, new battery systems and the need for higher levels of automated redundancy.

How has the progress been?

- The Paris summer Olympics 2024 is expected to be the big moment. France is working on two dedicated routes to transport passengers.
- Landing and takeoff zones at the Pontoise-Cormeilles-en-Vexin hub are being tested on parameters such as noise levels, integration of drones and eVTOLs with existing air traffic, battery charging and also maintenance.

How will it be in India?

- Blade is an urban air mobility company that aims to connect places that are heavily congested and also not well connected by air services.
- The concept of 'Advanced Air Mobility' comes in, i.e., connecting places through vertical aircraft and thus skipping road travel. This is being done now by helicopters, but eVTOLs will step into this space.
- Blade U.S. is currently working with electric vertical aircraft (EVA) manufacturers such as Beta Technologies and has partnered with them for an all electric fleet by the year 2024.
- eVTOLs are noise free, have a zero carbon footprint and are more affordable. Beta technologies and other EVA manufacturers have been extended an invitation to manufacture in India.

What is the value of the market?

- The global market for eVTOLswas put at $8.5 million in 2021 and is to grow to $30.8 million by 2030.
- The demand will be on account of green energy and noise-free aircraft, cargo carrying concepts and the need for new modes of transport.
- The UAM market is expected to expand at a compound annual growth rate of 25% between 2018-25. By 2025, it is anticipated to be a $74 billion market. This includes the eVTOLs market since UAM ideally focuses on the use of eVTOLs.

NOROVIRUS

Why in news?

- At least two cases of norovirus have been found in Thiruvananthapuram among lower primary school students.
- The infection, which causes vomiting, diarrhoea and fever as symptoms, was diagnosed after samples were tested at a government analytical lab. More samples have been sent for examination. So far, it is believed that students got food poisoning from mid-day meals distributed at the schools.
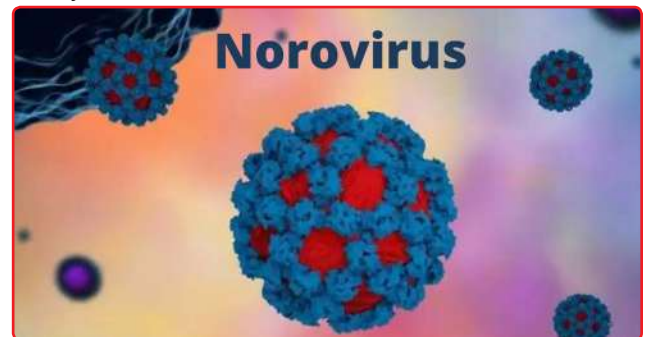
What is norovirus?

- Norovirus is a highly contagious virus that is also sometimes referred to as the 'stomach flu' or the 'winter vomiting bug'.

Transmission:

- It can be transmitted through contaminated food, water, and surfaces.
- The primary route is oral-faecal.
- It is similar to diarrhoea-inducing rotavirus and infects people across age groups.
- Disease outbreaks typically occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.
- According to the WHO, emerging evidence suggests that "norovirus infection is associated with intestinal inflammation, malnutrition and may cause long-term morbidity".

What are the symptoms?

- The initial symptoms of norovirus are vomiting and/or diarrhoea, which show up one or two days after exposure to the virus.

- Patients also feel nauseous, and suffer from abdominal pain, fever, headaches and body aches. In extreme cases, loss of fluids could lead to dehydration.

What precautions can one take?

- One may get infected multiple times as the virus has different strains. Norovirus is resistant to many disinfectants and can withstand heat up to 60°C. Therefore, merely steaming food or chlorinating water does not kill the virus. The virus can also survive many common hand sanitisers.
- The basic precaution is also the most obvious repeatedly washing hands with soap after using the lavatory or changing diapers. It is important to wash hands carefully before eating or preparing food.
- During outbreaks, surfaces must be disinfected with a solution of hypochlorite at 5,000 parts per million.
- The US Centre for Disease Control and Prevention suggests that those infected should avoid contact with others and avoid preparing food for others while sick and for two days after symptoms stop.

What is the treatment?

- The disease is self-limiting. The infection, even though it takes a lot out of the patient, normally lasts only two or three days, and most individuals who are not very young, very old, or malnourished can ride it out with sufficient rest and hydration.
- Diagnosis is done by real-time reverse transcription-polymerase chain reaction. No vaccines are available for the disease.

INDIA'S STAND TRIPS VACCINE INEQUITY

Context:

- Being a world leader in vaccine supply and not a recipient in waiting, India could easily overcome the challenges of vaccine inequity.
- India's cumulative Covid-19 vaccination coverage exceeds 193 crore doses as on May 28, 2022 including ongoing precautionary doses and vaccination among children above the age of 12 years.

'Pharmacy of the world':

- Right from the outbreak of the pandemic, India's role in supporting global and regional efforts stood out, being examples of stellar leadership transcending the realities faced as a developing country.
- India's own challenges in dealing with the pandemic have been gigantic as it is home to the world's second largest population. India's capabilities as the 'pharmacy of the world' enabled it to take the lead on global supplies of essential medicines to fight the pandemic in the initial months.

TRIPS Waiver:

- India has been at the forefront of vaccine equity and has pushed for the Trade-Related Aspects of Intellectual Property Rights (TRIPS) waiver at the WTO (along with South Africa that has previously faced the brunt of the HIV epidemic) since as early as October 2020.
- The initial proposal signaled a fundamental shift to broad-based temporary IP concessions during global health emergencies like that of the Covid-19 pandemic, across IPR provisions to allow "prevention, containment or treatment" of the disease.
- This proposal (revised in May 2021) has now been co-sponsored by a large number of developing countries.
- Notably, India's Vaccine Maitri programme worked on the premise that 'no one is safe until everyone is safe'.

India's exemplary global leadership:

- India took the lead in proposing the TRIPS waiver for vaccines (and other health goods) despite having no direct interest. The efforts of India and South Africa in this regard has galvanised the developing world.
- India has remained steadfastly committed to this idea despite pressure from the EU, UK, and Switzerland, which are preventing access to vaccines to poor countries, making them suffer and leading to loss of lives. Due to India's pressure, global supply lines have remained open throughout for key components of vaccines being made in India and elsewhere.

Humanity model vs. Fashion model:

- In making these extraordinary efforts, India is upholding the idea that life-saving medical supplies are not ordinary consumer goods to be distributed pursuant to the fashion model, so long as supply falls short of demand, sellers ration access by raising the price, giving early access to the highest bidders.
- Instead, the distribution of such essential goods should be governed by thehumanity model, early supply goes wherever it will contribute most to containing and suppressing the disease.
- The fashion model favors suppliers. It allows them to collect handsome premiums during the early period of demand-supply imbalance, which they can prolong by slowing production and delivery.
- Obviously, the humanity model would be much better for most people, as it would help in ramping up production and delivery at top speed and ensure supply to suppress the pandemic as effectively as possible, thereby averting infections and new disease strains.
- This model is better even for the world's affluent and well-insured—they may get access to relevant remedies somewhat later, in comparison to the fashion model, but the overall extent and duration of the pandemic are reduced.
- By valuing the health of all human beings equally, the humanity model is also morally superior,recognising that essential medical supplies are fundamentally different from fashion goods such as handbags and exercise machines.

How can we build on the TRIPS waiver and its underlying principle toward increasing the justice and effectiveness of global provisioning of medical supplies?

- One key idea is to broadly remove the monopoly markups that deprive so many people of access to patented medical products. Pfizer has just taken a laudable such step by committing to sell all its patented products at non-profit prices in low-income countries.
- To ensure R&D towards developing new products, pharmaceutical innovators must earn enough to cover their fixed costs and make a decent profit. But these earnings need not be from monopoly rents.

Health Impact Fund:

- A coalition of states could finance a health impact fund (HIF) to encourage and incentivise innovators to exchange their monopoly privileges on specific new technologies for annual payments based on the health gains achieved with them.
- This HIF would motivate innovators to organize their development, manufacturing, and delivery efforts toward reducing the global burden of disease most cost-effectively, while fully including the poor in their population-level strategy.

THE SCIENCE BEHIND THE CANCER CURE AND THE THERAPY'S FUTURE IN INDIA

Why in news?

- Recently, in a medical trial, 12 patients in the United States were completely cured of rectal cancer without requiring any surgery or chemotherapy.

Details:

- The trial used a monoclonal antibody called dostarlimab every three weeks for six months for the treatment of a particular kind of stage two or three rectal cancer.
- The study was done by doctors from the Memorial Sloan Kettering Cancer Centre in New York.

What are the findings?

- The trial showed that immunotherapy alonewithout any chemotherapy, radiotherapy, or surgery that have been staples of cancer treatment could completely cure the patients with a particular kind of rectal cancer called 'mismatch repair deficient' cancer".
- All 12 patients had completed the treatment and were followed for six to 25 months after.
- No cases of progression or recurrence had been reported during the follow-up. The response too was rapid, with symptoms resolving in 81% of the patients within nine weeks of starting the therapy.

What is this deficiency, and how was it cured?

- 'Mismatch repair deficient' cancer is most common among colorectal, gastrointestinal, and endometrial cancers. Patients suffering from this condition lack the genes to correct typos in the DNA that occur naturally while cells make copies.
- The immunotherapy belongs to a category called PD1 blockades that are now recommended for the treatment of such cancers rather than chemotherapy or radiotherapy.
- PD1 is a type of protein that regulates certain functions of the immune system, including by suppressing T cell activity, and PD1 blockade therapy looks to release the T cells from this suppression.
- The first immunotherapy treatment in India was conducted at AIIMS in 2015.
- India has a couple of PD1 blockades available, although not the one used for this study.
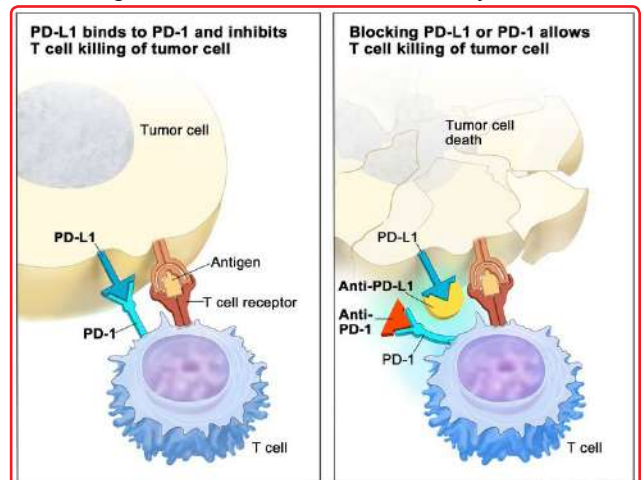
If PD1 therapy was already in use, what's new in the trial?

- Earlier, this therapy was used post-surgery, but the study has shown that a surgery may not be required.
- Although the therapy is usually used for cancers that have metastasised (spread to locations other than where the cancer formed), it is now recommended for all mismatch repair deficient cancers as they result in quicker improvement and lesser toxicity as compared to traditional chemo and radiotherapy.
- Eliminating other treatments can improve a patient's quality of life by preserving fertility, sexual health, and bladder and bowel functions.

When can such a treatment be accessible in India?

- The problem with immunotherapies is that they are expensive and unaffordable for most people in India, and certainly for those coming to AIIMS. A genetic test can also cost up to Rs 30,000, the patients here cannot afford all this.
- The precision medicine, such as using particular immunotherapy drugs for particular types of cancers, is still at a nascent stage in India. Precision medicine for cancer treatment is happening in India, but it is still in nascent stages. It would take at least ten years for it to become commonplace.

Future prospects:

➲ It is expected that in future, cancer will be like any other chronic disease. The future of cancer treatment is molecular oncology.

THE INDIAN PATENT REGIME AND ITS CLASH WITH THE U.S. NORMS

Why in news?

➲ The U.S. Trade Representative (USTR) said in its recent report that India was one of the most challenging major economies as far as IP protection and enforcement is concerned.

➲ It has decided to retain India on its Priority Watch List along with six other countries- Argentina, Chile, China, Indonesia, Russia and Venezuela.

➲ Among the issues raised in the report are concerns about what can be patented, waiting times for obtaining patents, reporting requirements, and data safety.

Review by Parliamentary Standing Committee in 2021:

➲ India had undertaken an intellectual property review exercise in 2021, where a Parliamentary Standing Committee examined the subject taking into account the views of the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry; Confederation of Indian Industry (CII); Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers; Department of Agriculture Research and Education, Ministry of Agriculture and Farmers' Welfare and Federation of Indian Chambers of Commerce and Industry (FICCI), as well as various legal associates.

➲ The Committee also undertook a study visit and interacted with various stakeholders and representatives from the Maharashtra and Goa State governments.

Indian patent regime:

➲ A patent is an exclusive set of rights granted for an invention, which may be a product or process that provides a new way of doing something or offers a new technical solution to a problem.

The Indian Patent Act of 1970 governs Indian patents. Under the act, patents are granted if the invention fulfils the following criteria:

➲ It should be novel.

➲ It should have inventive step/s or it must be non-obvious.

➲ It should be capable of Industrial application.

➲ It should not attract the provisions of sections 3 and 4 of the Patents Act 1970.

India, a signatory to TRIPS & IPR related conventions:

➲ India has gradually aligned itself with international regimes pertaining to intellectual property rights.

It became a party to the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement following its membership to the World Trade Organization on January 1, 1995. Following this, it amended its internal patent laws to comply with TRIPS, most notably in 2005, when it introduced pharmaceutical product patents into the legislation.

➲ India is also a signatory to several IPR related conventions, including the Berne Convention, which governs copyright, the Budapest Treaty, the Paris Convention for the Protection of Industrial Property, and the Patent Cooperation Treaty (PCT), all of which govern various patent-related matters.

Patents for to pharmaceutical products in India:

➲ An interesting point is that the original Indian Patents Act did not grant patent protection to pharmaceutical products to ensure that medicines were available to the masses at a low price. This was based on the recommendations of a 1959 commission chaired by the jurist RajagopalaAyyangar, so as to minimize if not eliminate the abuses to which a system of patent monopoly is capable of being put."

➲ Patent protection of pharmaceuticals were re-introduced after the 2005 amendment to comply with TRIPS.

The challenges raised by USTR:

➲ In its India section, the Special 301 report highlighted a range of issues in domains ranging from copyright and piracy to trademark counterfeiting and trade secrets, saying that India "remained one of the world's most challenging major economies with respect to protection and enforcement of IP."

➲ The issue of narrow patentability criteria was again raised in relation to Section 3(d) of the Patent Act, with the report saying that in the pharmaceutical sector, the United States "continued to monitor the restriction on patent-eligible subject matter in Section 3(d) of the Indian Patents Act and its impacts."

The Indian stance on narrow patentability:

➲ One of the main points of contention between India and the U.S. has been Article 3(d) of the Indian Patent Act.

➲ Section 3 deals with what does not qualify as an invention under the Act, and Section 3(d) in particular excludes "the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant" from being eligible for protection under patent law.

➲ The Parliamentary Standing Committee addressed this as well, which pointed out that the section

"acts as a safeguard against frivolous inventions in accordance with the flexibility provided in the TRIPS agreement".

➲ Section 3(d) prevents what is known as "evergreening" of patents.

Parliamentary Committee on"evergreening" of patents:

➲ According to the Committee's report, Section 3(d) allows for "generic competition by patenting only novel and genuine inventions."

➲ The Committee also refers to the seminal judgement in the case Novartis vs. Union of India, which upheld the validity of section 3(d). In this case, pharmaceutical company Novartis filed a patent for the final form of cancer drug Gleevec, which was challenged in the Supreme Court.

➲ The Supreme Court held that Gleevec was merely a beta crystalline form of a known drug, namely, i matinibmesylate, and did not differ significantly in properties with regard to efficacy. Hence, it could not be patented in India.

TRIPS, the Doha Declaration and public health exemptions

➲ The judgement also says that the section complies with the TRIPS agreement and the Doha Declaration.

➲ The Doha Declaration on the TRIPS Agreement and Public Health was adopted on November 14, 2021, by the WTO member states. This declaration recognises the "gravity of public health problems affecting developing and least developed nations" and stresses the need for TRIPS to be part of the wider national and international action to address these problems.

➲ Saying that the TRIPS agreement "does not and should not prevent members from taking measures to protect public health," the declaration points out that the agreement "can and should be interpreted and implemented in a manner supportive of WTO members' right to protect public health and, in particular, to promote access to medicines for all."

➲ These flexibilities include the right to grant compulsory licenses and the grounds for such licenses, the right to determine what "constitutes a national emergency or other circumstances of extreme urgency, including public health crises" and the right to establish its own regime for the exhaustion of intellectual property rights.

➲ Compulsory licenses can be invoked by a state in public interest, allowing companies apart from the patent owner to produce a patented product without consent.

Resolve through bilateral dialogue:

➲ The Parliamentary Standing Committee argued that the provision was the catalyst for genuine innovations, preventing frivolous successive patents. It appreciated the fact that through Section 3(d), "India

strives to balance the international patent obligations and its commitments to protect and promote socio-economic welfare and public health."

➲ It indicated that India should resolve its differences with the U.S. regarding the disqualification of incremental inventions through bilateral dialogue.

➲ Recently, India, TRIPS and issues related to the global patent regime became relevant after India and several other countries sought a temporary waiver of certain provisions of the TRIPS agreement to deal with the COVID-19 pandemic. Waiving these rights was sought to promote manufacturing of vaccines, therapeutics, and equipment to deal with the pandemic.

Issues pertaining to courts:

➲ The USTR report too highlighted issues relating to judicial delays. The 2015 Commercial Courts Act offered an opportunity to reduce these delays and increase expertise but only a limited number of courts have benefited under the Act. Jurisdictional challenges are reducing the courts' effectiveness, according to rights holders, and courts are also suffering due to inadequate resources and training.

➲ Moreover, the abolishing of the Intellectual Property Appellate Board (IPAB), resulting in the redirection of courts has "created uncertainty around adjudication of IP cases and copyright royalty rate setting," says the report.

➲ The Standing Committee too has expressed that the abolition of IPAB under Tribunals Reforms (Rationalisation and Conditions of Service) Ordinance, 2021 should be reconsidered in wake of its pivotal role in the adjudication of IPR appeals and cases.

➲ It recommends that rather than being abolished it should be empowered and strengthened with more structural autonomy, infrastructural, and administrative reforms, while also ensuring that the required officials and staff are appointed in a timely way.

Way Forward:

➲ U.S. and India will continue to engage on IP matters, the report says, especially through the Trade Policy Forum's Intellectual Property Working Group.

IS MONKEYPOX A SEXUALLY TRANSMITTED INFECTION?

Why in news?

➲ Europe has been worst affected with over 704 Moneypox cases,as per theEuropean Centre for Disease Prevention and Control.

➲ Monkeypox cases have been detected in 18 countries in Europe, mainly in the U.K., Spain and Portugal. The U.S.has confirmed45 cases of monkeypox virus cases.

Mode of transmission:

➲ Most of the cases reported so far have been in men who have sex with men and bisexual men. However,

the risk of monkeypox virus is not restricted to men who have sex with men.

➲ People who closely interact with someone who is infectious, including health workers, household members and sexual partners are at greater risk for infection. This includes touching and being face-to-face.Monkeypox can spread through close skin-to-skin contact during sex, including kissing, touching, oral and penetrative sex with someone who has symptoms.

➲ The WHO stresses that it is currently not clear if monkeypox virus can spread through semen or vaginal fluids.

➲ Monkeypox rashes are sometimes found on genitals and in the mouth, which is likely to contribute to transmission during sexual contact. Mouth-to-skin contact could cause transmission where skin or mouth lesions are present.

➲ The virus can also spread through large respiratory droplets and contact with bedding, towels, etc. that a person with monkeypox infection has used.
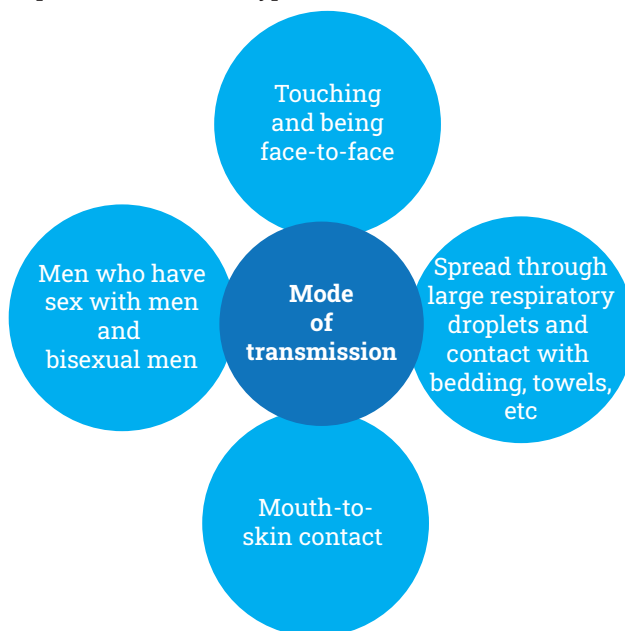
Virus in semen:

➲ A recent study found the virus in the seminal fluid of four men who tested positive for monkeypox virus. The researchers have ruled out the possibility of sample contamination. Based on the findings, they say, although these findings cannot be considered definitive evidence of infectivity, they demonstrate viral shedding whose efficiency in terms of transmission cannot be ruled out.

➲ Direct contact is the primary route of monkeypox virus transmission.The presence of the virus in the seminal fluid in all four men cannot be considered as proof of sexual transmission unless proven that virus transmission could not have happened any other way.

➲ In the case of HIV, besides sexual route of virus transmission, the virus can be transmitted from the mother to the child (vertical transmission) during pregnancy, labour, delivery or breastfeeding and also through injection drug use. Yet, HIV is called a sexually transmitted disease.

➲ HIV spread is predominantly sexual/parenteral, while monkeypox is mainly direct contact.

➲ Though most of the cases have been reported in men who have sex with men and presenting with lesions mostly seen in the anal and genital areas as well as the mouth, monkeypox is not considered to be sexually transmitted.

➲ Instead, intimate, skin-to-skin contact is considered key to transmission. Even if other studies find infectious monkeypox viruses in the seminal fluid, it is unlikely that monkeypoxwould be called as a sexually transmitted infection.

Sexually transmitted?

➲ So far the data on the 800 plus cases of monkeypox happening in non-endemic countries point at sexual contact (intimacy through sex) playing an important role in transmission. Whether this is happening through semen, vaginal secretions or skin-to-skin contact is semantics.

➲ Virologist adds that definition of sexually transmitted infections is not clear and it is important to clarify this while trying to contain a large outbreak. They cites scabies, herpes, syphilis, pubic lice "crabs", which are STIs that are transmitted through close contact.

➲ The reason why it is important to use the correct terminology and highlight the mode of spread which may be important is that it allows for targeted interventions to stop an outbreak.

➲ A lot of the cases in the present monkeypox outbreak have clustered in sexual networks. Therefore, it is important to highlight this in communication while providing caveats that this is not the sole mechanism of spread.

Question of stigma:

➲ Calling any disease that spreads through sexual contact an STI is not intended to stigmatise. It is intended to identify and address risk factors and offer interventions to help folks manage their risk.

➲ Calling an infection an STI is not intended to be stigmatising. It allows for people to understand how they could be exposed and potentially infected, it also helps with tracing partners, notifying them so they are aware of their exposures to seek treatment.

A NETWORK OF SPIKING NEURONS DEMONSTRATED

Why in news?

➲ Using the phenomenon of quantum tunnelling,IIT Bombay researchers have demonstrated, for the first

time, a spiking neuron network that is highly compact and shows potential for brain-scale implementation.

⮑ The research demonstrates the use of a 36-member network of spiking neurons in a speech recognition module.

Energy efficient mode:

⮑ The inter-disciplinary work showed that their concept of a neuron could be realised and that it works in an energy efficient mode with low power requirement, suitable for emulating the brain.

⮑ In second generation, artificial neural networks, neurons represent their state in eight-bit precision. This does not mimic biological systems.

⮑ Instead in a spiking neural network, the next step, the neuron's output state is "spike" (equivalent to a "one") or "no spike" (equivalent to a "zero"). This has a binary representation and is closer to the natural workings of neurons in the brain. If such a neural network should also occupy less space and consume little power, it could meet the decadal challenge of brain scale computing.

Making hardware circuit:

⮑ First, the algorithm of (audio) processing had to be developed. While mathematically the algorithm may be framed in an ideal situation, in actuality, the developer faces non-linearities and other variables.

⮑ In the next step which involved developing the hardware circuit, researchers used the standard technology with a different applied voltage pattern to operate the technology in the quantum-tunnelling-dominant regime.

⮑ While the group was hoping at least one neuron would work well, the whole network sprang to life. Comparing this spiking neural network with existing state-of-the-art technology is encouraging.

WTA network
(lateral inhibition)
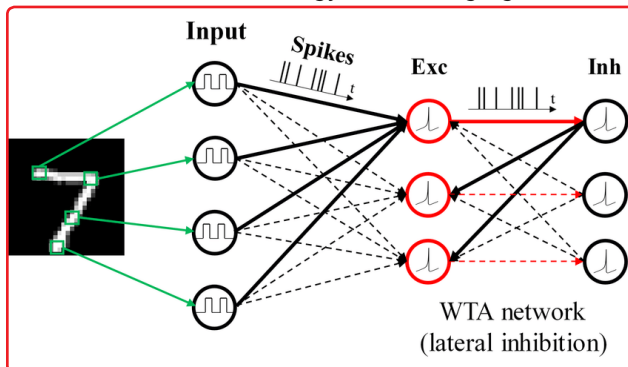
Future Prospects:

⮑ The researchers show that they have achieved 5,000 times lower energy-per-spike at a similar area, 50 times less area at a similar energy-per-spike, and ten times lower standby power at a similar area and energy-per-spike compared to the state-of-the-art benchmarks.

⮑ Such overall performance improvement makes our neuron a promising candidate to enable brain-scale computing.

HETEROLOGOUS BOOSTER VACCINE & ITS ADVANTAGES

Context:

⮑ With the number of COVID-19 cases increasing, a certain sense of guarded concern has naturally crept into pandemic control activities.

⮑ With the number of cases, rising by the thousands on a daily basis, (on June 11, in a span of 24 hours, over 8,000 fresh cases were reported), repeat infections, breakthrough infections for those who have had the double dose of vaccine, the debate about getting a booster or precaution dose has gotten shriller.

Vaccine strategy

⮑ Currently, the government supports vaccination through its healthcare network only for senior citizens, with or without co-morbidities, and certain categories including frontline workers and healthcare workers.

⮑ It has given the private sector the go-ahead to vaccinate eligible groups with the precaution dose for a price.

⮑ The debate has also increasingly called to question the appropriate vaccine to use in the precautionary dosage, whether it should be homologous, the same vaccine that was administered as primary dose, or if it should be heterologous, any vaccine other than the primary dose, for a better immune response.

Are heterologous booster shots better?

⮑ There is a growing body of scientific evidence to prove that when heterologous doses are used as booster shots, the immune response is more efficient.

⮑ A recent study clearly shows the immunogenicity and safety of heterologous AZ/BNT vaccination and encourages further studies on heterologous vaccination schedules.

⮑ Heterologous prime-boost strategies may offer immunologic advantages to extend the breadth and longevity of protection provided by the currently available vaccines.

⮑ Demonstrating with the AstraZeneca base vaccine supplemented by an mRNA vaccine booster, theyconcluded that "the heterologous boost immunisation strategy provides an immune response that may prove to be beneficial for durable prevention and control of COVID-19."

⮑ Many countries have restricted vaccine boosters to people at high risk of SARS-CoV-2 infection or related complications, including older adults, healthcare workers, and individuals with underlying health conditions, making it all the more important to prioritise the use of appropriate vaccines that would

also enable a fair and equitable distribution of the doses.

Other advantages

- ➲ The researchers pointed out that an option to use heterologous booster vaccines could simplify the logistics of administering such vaccines, since the booster formulation could be administered regardless of the primary series.
- ➲ Since the first introduction of a vaccine for COVID-19 several more vaccines have entered the market. More options are now available across the spectrum, made from various vaccine candidates.
- ➲ While their availability in numbers might be low, the fact that there are more vaccines available in the market is likely to level the playing field.

Way Ahead

- ➲ It is now clear that, in a world where vaccine equity is a utopia, scientists can only strive for how to best use the available vaccines to reach for a maximum attainable benefit.
- ➲ A mix and match vaccination strategy, including inactivated vaccines for priming and heterologous boosters thereafter, seems to be a realistic policy.
- ➲ It would be prudent for governments, including in India, to switch to a heterologous booster regimen to allow more persons eligible for the vaccine and able to pay for it access it in the market.
- ➲ As a community health move, it will also be easy for health administrators to deploy newer vaccines in the market as part of the public vaccination programme.
- ➲ Shortages of vaccines will not be an issue when the reliance on just a few vaccines disappears.

'ABNORMAL' DINOSAUR EGG IN INDIA DIGS UP NEW QUESTIONS FOR EVOLUTION

Why in news?

- ➲ A team of researchers from the University of Delhi has discovered a unique set of fossilised dinosaur eggs, with one egg nesting within the other at the Dinosaur Fossil National Park, in Dhar District of Madhya Pradesh.

Dinosaurs in Central India:

- ➲ Dinosaurs of the Sauropod family were among the largest land animals that have ever lived and were widespread millions of years ago in the territory that is now India. Fossils of these animals have been found in Gujarat, Madhya Pradesh as well as Meghalaya.
- ➲ The Upper Cretaceous Lameta Formation of Central India is long known for its dinosaur fossils (both skeletal and egg remains), and scientists, documented 52 titanosaurid sauropod nests near Padlya village close to Bagh town in Madhya Pradesh. One of these nests consisted of 10 eggs, one of which was the "abnormal" egg.
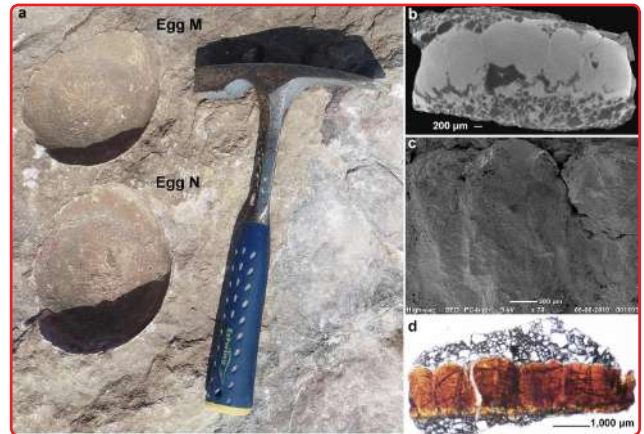
'Egg-in-egg' phenomenon:

- ➲ The findings, talk about the 'egg-in-egg' phenomenon in a titanosaurid dinosaur egg found from the Bagh area of Dhar District.
- ➲ While eggs-within-eggs are rare phenomena, they are so far known to occur only in birds and have never known in reptiles. This discovery brings out newer connections between reptilian and avian evolution.

Key observations:

- ➲ The egg has two continuous and circular eggshell layers separated by a wide gap like that observed in birds. Until this discovery, no egg-in-egg fossil egg was found in dinosaurs and other reptiles such as turtles, lizards, and crocodiles.
- ➲ It was believed that dinosaurs had a reproductive function similar to that of turtles and other reptiles (unsegmented oviduct) in contrast to segmented reproductive tract of crocodiles and birds with separate regions of membrane and shell deposition.
- ➲ Although crocodiles have separate regions of shell membrane and mineralised shell deposition, they ovulate and release all the eggs simultaneously like turtles and other reptiles. In birds, ovulation is sequenced and eggs are laid one at a time.

Oviduct morphology:

- ➲ The new discovery of an ovum-in-ovum egg, characteristic of birds in titanosaurids are for a segmented oviduct as in crocodiles and birds and possible sequential laying of eggs as in birds.
- ➲ The finding of ovum-in-ovo egg from a titanosaurid nest opens up the possibility that sauropod dinosaurs had an oviduct morphology similar to those of crocodiles or birds and they may have adapted to a mode of an egg-laying characteristic of birds.

Way Forward:

- ➲ The new find highlights the fact that Central and Western India hold great potential for dinosaur fossils which may offer important information on dinosaur diversity, nesting behaviour and reproductive biology, the authors note.

ICMR GUIDELINES FOR CHILDREN AND ADOLESCENTS WITH TYPE-1 DIABETES

Why in news?

- India has the highest number of incident and prevalent cases of Type-1 diabetes in the world as per recent estimates from the International Diabetes Federation.
- Recently, the Indian Council of Medical Research (ICMR)has published a comprehensive document providing advice on care of diabetes in children, adolescents and adults with Type 1 diabetes.

What is Type I diabetes?

- Type I diabetes, also called juvenile diabetes is a chronic condition in which the pancreas produces little or no insulin.
- It typically appears in adolescence and symptoms include increased thirst, frequent urination, hunger, fatigue and blurred vision.
- Treatment is aimed at maintaining normal blood sugar levels through regular monitoring, insulin therapy, diet and exercise.
- The new guideline document states that individuals with Type-1 diabetes need support to survive, using insulin and other therapies, and to live their entire life without stigma, restrictions, or disabling complications due to their illness.

Key Guidelines:

- The patients should inform the physician in advance, preferably four to six weeks before the planned travel and should have medications and blood testing materials for the whole trip plus reserve supplies for at least two to four weeks if unforeseen circumstances extend the travel.
- They also advise carrying comfortable shoes and socks to avoid straining the feet while on travel.
- The patients should avoid walking barefoot. Alternating between two pairs of shoes can decrease the risk of blisters and calluses. New shoes, if purchased, should be used for at least two to three weeks before travel. Patients with a medical identification bracelet should have information on the disease, use of insulin, and disclose any allergies, besides this valid travel insurance should be ensured for international travel.
- The patients who have language problems should have cards or other means to communicate that they have diabetes, these are their medications, what to do if they have hypoglycemia.

Meals and snacks:

- Being aware of the serving time of meals and snacks and putting a request to serve as per personal schedule to avoid fluctuations in glucose due to perturbed schedule is also advised.
- Patients should check their blood glucose level as soon as possible after landing and jet lag can make it hard to tell if one has very low or very high blood glucose said the guidelines.

Special care in case of traveling east or west:

- Diabetes management depends on a 24-hour medication schedule, and medication adjustments are needed only when the patient is traveling east or west, not north or south.
- Traveling east results in a short day, and requires a potential reduction in insulin. Traveling west increases the day length, possibly requiring an increase in insulin dose. The insulin adjustments are usually required if crossing more than five time zones and staying for more than three days abroad,'.

Burden of diabetes in India:

- India is home to the world's second largest adult diabetes population and every sixth person with diabetes in the world is an Indian.
- The past three decades witnessed a 150% increase in the number of people with diabetes in the country and the growing prevalence of pre-diabetes indicates a further increase in the disease in the near future, according to the Council.
- What is also worrying is the fact that diabetes, in India, has traversed from high to the middle income and underprivileged sections of our society.
- A matter of immense concern is the progressive lowering of age at which Type 2 diabetes is presenting, with an inflection in disease prevalence becoming apparent in the age group of 25–34 years in both urban and rural areas.

REUTERS INSTITUTE DIGITAL NEWS REPORT 2022

Why in news?

- Recently, the 2022 Reuters Institute Digital News Reportwas released.
- According to the 2022 Reuters Institute Digital News Report, trust in news is falling in nearly half the countries surveyed, with significant proportions of the public, especially younger age groups, beginning to turn away from news.
- Further, news consumption is increasingly happening via social media platforms such as TikTok rather than traditional media.

What is the scope of this report?

- This study, an annual one commissioned by the Reuters Institute for the Study of Journalism, tracks how news is consumed in different countries.
- The 2022 report, the eleventh overall, is based on a survey conducted by YouGuv, a British market research and data analytics firm, in January/ February 2022 through online questionnaires.
- It covers 46 markets in six continents. Since it is based on online questionnaires, the findings are not

necessarily nationally representative, especially for countries with lower internet penetration.

⮑ For India, the data is more representative of younger English speakers and not the national population as such.

What are the major trends highlighted in the report?

⮑ Broadly, the report documents the ways in which "the connection between journalism and much of the public may be fraying". It flags six major trends which could have wider socio-political implications.

a) Firstly, people are trusting news content less and less.

b) Second, consumption of traditional news media declined in nearly all the countries surveyed.

c) Third, the proportion of news consumers who say that they "avoid news" has risen sharply across countries, with the report describing the phenomenon as "selective avoidance".

d) Fourth, despite small increases in the proportion of people willing to pay for online news (mostly in richer countries), the growth in digital subscriptions for news content seems to be leveling off.

e) Next, "the smartphone has become the dominant way in which most people first access news in the morning".

f) Finally, the report notes that while Facebook remained the most-used social network for news, it is TikTok that has become the fastest-growing network, "reaching 40% of 18-24-year-olds, with 15% using the platform for news". TikTok, however, is currently banned in India.

What is 'selective avoidance' of news?

⮑ While the majority of people remained engaged with news, the report finds that a growing minority is increasingly choosing "to ration or limit their exposure to it or at least to certain types of news".

⮑ The report calls this behaviour "selective avoidance" and says this is one of the reasons why news consumptions levels have failed to increase as per expectations. The proportion that says they avoid

news has doubled in Brazil (54%) and the U.K. (46%) since 2017.

⮑ Across markets, respondents cited a variety of reasons for this avoidance. Many said they were "put off by the repetitiveness of the news agenda especially around politics and COVID-19 (43%).

⮑ Some said they were "worn out by the news" (29%). A significant number said they avoided news because they didn't trust it (29%). About one-third (36%), especially those under 35, said that news ruined their mood.

What are the reasons cited for declining trust in news content?

⮑ The average level of trust in news, at 42%, was found to be lower than the previous year. Trust levels fell in 21 of the 46 markets surveyed, rising in just seven. The report states that an "indifference to news and its value, along with widespread perception of political and other biases by the media, are two of the main reasons for low trust".

⮑ The trust levels were also lower among those on the right, compared to those on the left, of the ideological spectrum, a pattern most pronounced in the U.S. In France, on the other hand, the lack of trust closely tracked the class divide, with the 'haves' showing higher levels of trust, while the 'have-nots' viewed media as often aligning itself with the elites.

⮑ Other reasons for low trust included perceptions of undue influence from business or political interests, with just 19% agreeing that "news organisations put what's best for society ahead of their own commercial or political interests."

⮑ At the same time, many more said that all or most news outfits "put their own political views (40%) or commercial interests (42%) ahead of society."

What about preferred modes of news consumption?

⮑ Across markets and age groups, text is still king when it comes to news consumption. However, younger audiences, especially 'digital natives' who grew up with networks like Facebook and TikTok, were more likely to say they "watch the news".

⮑ In India, 58% said that they "mostly read" the news while 17% said they "mostly watch" it. On the other hand, the comparable figures for Finland, which has a historic pattern of high newspaper consumption, was 85% and 3% respectively.

What does the report say about trends in India?

⮑ In the section on India, produced in collaboration with the Asian College of Journalism, the report, observing that "India is a strongly mobile-focussed market," says that 72% of the survey respondents accessed news through smartphones and 35% did so via computers.

⮑ Also, 84% of the Indian respondents sourced news online, 63% from social media, 59% from television,

and 49% from print. YouTube (53%) and WhatsApp (51%) were the top social media platforms for sourcing news.

- India registered a small increase in the level of trust, with 41% trusting news overall. While legacy print brands and public broadcasters continued to have high trust levels, only a minority felt that the media was free from undue political influence and from undue business influence respectively.

LANGUAGE MODEL FOR DIALOGUE APPLICATIONS (LAMDA) SENTIENT OR NOT?

Why in news?

- Recently, a senior engineer at Google claimed that the company's Artificial Intelligence (AI)-based chatbotLanguage Model for Dialogue Applications (LaMDA) had become "sentient".
- The engineer, Blake Lemoine, published a blog post labelling LaMDA as a "person" after having conversations with the AI bot on subjects like religion, consciousness and robotics.
- The claims have also spurred a debate on the capabilities and limitations of AI-based chatbots and if they can actually hold a conversation akin to human beings.

Background:

- Blake Lemoine, a U.S. military veteran, was engaged by Google to test for bias/hate speech in LaMDA, Google's nextGen conversational agent. He was sent away on paid leave after claiming that the updated software is now sentient.
- He claims that the neural network with deep learning capacity has the consciousness of a child of seven or eight years old. He argues that consent from the software must be obtained before experiments are run on it. Google and many tech experts have dismissed the claim.

Is AI technology here?

- AI technology appears futuristic. However, Facebook's facial recognition software which identifies faces in the photos posted, the voice recognition software that translates commands, Alexa, and the Google Translate app are all examples of AI tech already around us.
- Inspired by the mathematician Alan Turing's answer to the question 'Can a machine think?', AI tech today aims to satisfy the Turing test to qualify as 'intelligent'.
- Turing was the designer and builder of the world's first computer, ENIGMA, which was used to break the German codes during the Second World War. To test if a machine 'thinks', Turing devised a practical solution.
- Place a computer in a closed room and a human in another. If an interrogator interacting with the machine and the human cannot discriminate between them, then Turing said that the computer should be construed as 'intelligent'. The reverse Turing test, CAPTCHA, is usedto limit technology access to humans and keep the bots at bay.

Which were the first chatbots to be devised?

- As electronics improved and first-generation computers came about, Joseph Weizenbaum of the MIT Artificial Intelligence Laboratory built ELIZA, a computer programme with which users could chat.
- ALICE (Artificial Linguistic Internet Computer Entity), another early chatbot developed by Richard Wallace, was capable of simulating human interaction.
- In the 1930s, linguist George Kingsley Zipfanalysed the typical human speech and found that most of the utterances began with 2,000 words. Using this information, Wallace theorised that the bulk of commonplace chitchat in everyday interaction was limited.
- The software won the Loebner Prize as "the most human computer" at the Turing Test contests in 2000, 2001, and 2004.

What is a neural network?

- A neural network is an AI tech that attempts to mimic the web of neurons in the brain to learn and behave like humans. Early efforts in building neural networks targeted image recognition. The artificial neural network (ANN) needs to be trained like a dog before being commanded.
- For example, during the image recognition training, thousands of specific cat images are broken down to pixels and fed into the ANN. Using complex algorithms, the ANN's mathematical system extracts particular characteristics like the line that curves from right to left at a certain angle, edges or several lines that merge to form a larger shape from each cat image.
- The software learns to recognise the key patterns that delineate what a general 'cat' looks like from these parameters.
- The App learns by itself, unsupervised by humans, by sorting and sifting through the massive data and finding the hidden patterns.

What is LaMDA?

- LaMDA is short for 'Language Model for Dialogue Applications', Google's modern conversational agent enabled with a neural network capable of deep learning. Instead of images of cats and dogs, the algorithm is trained using 1.56 trillion words of public dialogue data and web text on diverse topics.

- The neural network built on Google's open-source neural network, Transformer, extracted more than 137 billion parameters from this massive database of language data. The chatbot is not yet public, but users are permitted to interact with it.

- Google claims that LaMDA can make sense of nuanced conversation and engage in a fluid and natural conversation. The LaMDA 0.1 was unveiled at Google's annual developer conference in May 2021, and the LaMDA 0.2 in 2022.

How is LaMDA different from other chatbots?

- Chatbots like 'Ask Disha' of the Indian Railway Catering and Tourism Corporation Limited (IRCTC) are routinely used for customer engagement.

- The repertoire of topics and chat responses is narrow. The dialogue is predefined and often goal-directed. For instance, try chatting about the weather with Ask Disha or about the Ukrainian crisis with the Amazon chat app.

- LaMDA is Google's answer to the quest for developing a non-goal directed chatbot that dialogues on various subjects. The chatbot would respond the way a family might when they chat over the dinner table; topics meandering from the taste of the food to price rise to bemoaning war in Ukraine.

- Such advanced conversational agents could revolutionise customer interaction and help AI-enabled internet search.

Is the technology dangerous?

- The challenges of AI metamorphosing into sentient are far in the future; however, unethical AI perpetuating historical bias and echoing hate speech are the real dangers to watch for.

- Imagine an AI software trained with past data to select the most suitable candidates from applicants for a supervisory role.

- Women and marginalised communities hardly would have held such positions in the past, not because they were unqualified, but because they were discriminated against. While we imagine the machine to have no bias, AI software learning from historical data could inadvertently perpetuate discrimination.

BLACK DEATH

Why in news?

- There was much debated mystery over the place of origin of Black Death, one of the deadliest epidemics in the history of humankind.

- Recently, researchers have claimed that the disease originated in modern day northern Kyrgyzstan around 1338-1339 nearly 7-8 years before it ravaged large parts of the world.

What was the Black Death?

- The term Black Death refers to the bubonic plague that spread across Western Asia, Northern Africa, Middle East and Europe in 1346-53.

- Most scholars agree that the Black Death, which killed millions, was caused by bacterium Yersinia pestis and was spread by fleas that were carried by rodent hosts.

- The microorganism Y. pestis spread to human populations, who at some point transmitted it to others either through the vector of a human flea or directly through the respiratory system.

Symptoms:

- Contemporaries who wrote about the epidemic, often described the buboes (hard, inflamed lymph nodes) as the distinguishing clinical feature.

- The onset of symptoms was followed by intense fever and vomiting of blood. After the initial infection, most victims died within 2-7 days.

How did researchers pinpoint the Black Death's origin?

- In the late 19th century, excavations of two Christian cemeteries near Lake Issyk-Kul in Kyrgyzstan unearthed a settlement of a trading community that had been affected by an unknown disease in 1338-1339.

- They examined the tombstones, on which Syriac inscriptions stated that the victims died of an unknown epidemic or "pestilence".

- The researchers then extracted DNA from the teeth of seven people that were buried at the cemetery and found genetic traces of Y. pestis bacterium.

- The extracted DNA was compared with bacterial DNA collected from other plague victims in Europe.

- The researchers found that the strain of Y. pestis that caused the epidemic in the settlements near Lake Issyk-Kul was the direct ancestor of the strain that caused the Black Death.

By piecing together the Y. pestis genome from the cemeteries in Kyrgyzstan, researchers found a single plague strain that can be placed at the beginning of the Black Death outbreak before it spread to Europe years later.

Why is the new discovery significant?

The geographical origin point of the plague has been debated for centuries. Some historians have argued that the plague originated in China, and spread across Europe by Italian merchants who first entered the continent in trading caravans through Crimea.

According to another contested theory based on a 1348 memoir of an Italian notary from Piacenza, it has been argued Mongol army hurled plague-infested bodies into the city during the siege of Caffa (Crimea) and led to spread of the disease.

If the latest research is correct, it would mean that the plague spread through trading routes and not, as some historians have argued, through warfare a century prior.

Why was this plague called the Black Death?

It is commonly believed that the term Black Death gets its name from the black marks that appeared on some of the plague victims' bodies.

In the 14th century, the epidemic was referred to as the 'great pestilence' or 'great death', due to the demographic havoc that it caused.

Historian NukhetVarlik argues that the term Black Death was devised by European writers in the 19th century, becoming widely accepted as time went by.

German physician Justus Friedrich Carl Hecker is credited with universalizing the term in his 1832 book Der Schwarze Tod (Black Death), which was translated to other languages as well. He presented the Black Death as a unique plague, distinct from any other disease that came before it.

GAIA SPACE MISSION

Why in news?

Recently, the third dataset released by the European Space Agency's star-mapping Gaia probe, covering almost 1.8 billion stars in the Milky Way galaxy, has revealed an unexpected phenomena called 'starquakes', which are similar to earthquake-like movements but on the surface of stars.

The data has also revealed the largest chemical map of the entire Milky Way, showing the DNA of millions of stars, which includes their age, mass, chemical composition, colour, temperature, and metal content.

Besides, the new data has also made discoveries about binary star systems, quasars, asteroids, and exoplanets.

Anatomy of the Milky Way:

The Milky Way is just one of the estimated one to two hundred billion galaxies of varied shapes and sizes in the universe. Roughly 13 billion years old, the Milky Way is a barred spiral galaxy consisting of 100 to 200 billion stars, with the sun as its local star.

The galaxy is shaped like a flattened disc spread across 100,000 light-years with spiral arms. The majority of the stars are located in the disc, scattered around with a mixture of gas and cosmic dust.

The Milky Way has a central bulge where about 10 billion of its oldest stars are concentrated. The sun is positioned between the centre and the periphery of the galaxy.

Outside the bulge and the disc exists a halo of isolated stars and ancient clusters of stars, and further beyond this is an even bigger halo of invisible dark matter.
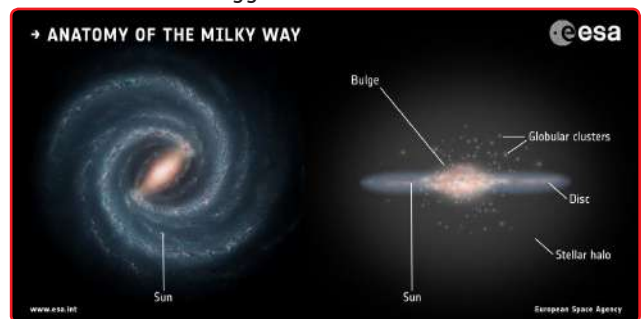
What is the Gaia mission?

Gaia is an ongoing astronomical observatory mission launched in December 2013 by the European Space Agency (ESA) with the objective of creating the most accurate and complete 3D map of the Milky Way by surveying 1% or one billion of the galaxy's 100 billion stars.

The almost hat-shaped spacecraft is fitted with two optical telescopes and the largest digital camera in space or the billion-pixel camera, with over 100 electronic detectors. This camera is precise enough to capture the diameter of a human hair from as far away as 1,000 km.

The spacecraft is strategically stationed 1.5 million km from the Earth, in the opposite direction of the sun, in an orbit around the gravitational parking point in space called the Lagrange 2 or L2.

In order to study the stars and objects, Gaia is also equipped with screening and imaging systems that employ three techniques—astrometry, photometry, and spectroscopy.

Astrometry is the science of measuring the movement and position of stars within the plane of the sky, photometry studies the colour, brightness and other derived properties of stars, and spectroscopy measures the radial velocity or the movement of stars towards or away from us by studying stellar spectra or the fingerprints of stars.

Spectra are obtained by passing the light from a star through a prism which splits it into a spectrum of colours.
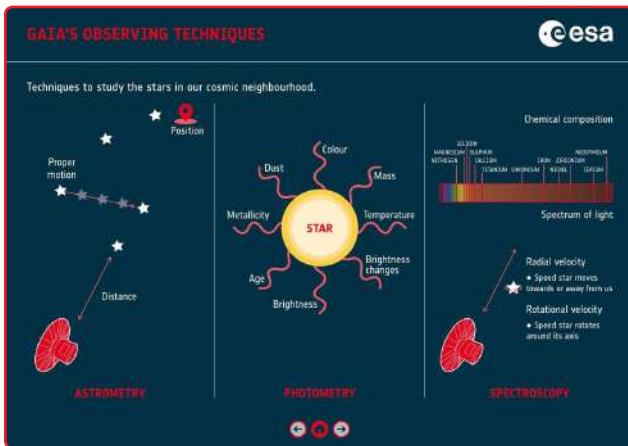
What has the new data revealed?

- Specifics of the new data collected by Gaia. Photo: European Space Agency
- The new set of data released was collected from the Gaia probe between 2014 and 2017 and contains improved information on nearly two billion celestial objects- including stars in the Milky Way, objects outside the galaxy and those inside our solar system.
- It contains the largest-ever three-dimensional map of stars in the Milky Way. The map shows the chemical compositions as well as past and future movements of stars.

Starquakes:

- One of the most surprising discoveriesmwas that of more than 100,000 'starquakes'- which can be likened to tsunamis or massive vibrations on the surface of stars that can change their shape.
- Such starquakes were also detected on the surface of stars that should not have any such large-scale vibrations as per existing astronomical theories.

Quasars:

- Quasars are extraordinarily active and bright cores of galaxies powered by supermassive black holes. These are the most luminous objects in the universe and are visible along its distant edges.
- The new Gaia data has revealed the measurements of

over a million confirmed quasars and data related to 6.6 million quasar candidates.

- The discovery of new quasars is significant as it helps to measure the most distant stretches of our universe.

Stellar DNA:

- The data shows chemical components, colours, brightness, velocity, temperatures, and positions of millions of stars. The chemical composition of the stars also reveals what elements they contain.
- Only light elements (hydrogen and helium) were formed during the Big Bang. Heavier elements, which scientists call metals, are built inside the stars, and when they die, newer stars are formed with the metals dispersed by dead stars.
- Chemical composition can thus be used to determine which stars were born in another galaxy and then migrated to the Milky Way.

Binary Stars:

- Binary star systems are two stars that orbit each other around a shared centre. The new data has revealed the position, distance, orbits, and masses of over 8,00,000 binary star systems.
- Scientists can extract from this data, the mass of individual stars of the binary system, how stars work, and even discover if one of the two stars is an exoplanet, a planet that existsoutside our solar system and generally orbits a star.

Asteroids and galaxies:

- The data has provided a catalogue of more than 156,000 asteroids in our Solar System, which includes their mass, composition, colour, and brightness (from which details of their shape and rotation can be derived).
- Besides mapping the Milky Way, the data has also found magnitudes of 2.9 million other galaxies, including how their stars were formed, how far they are and when they came into existence.

QUANTUM DIAMOND MICROSCOPE TO IMAGE MAGNETIC FIELDS
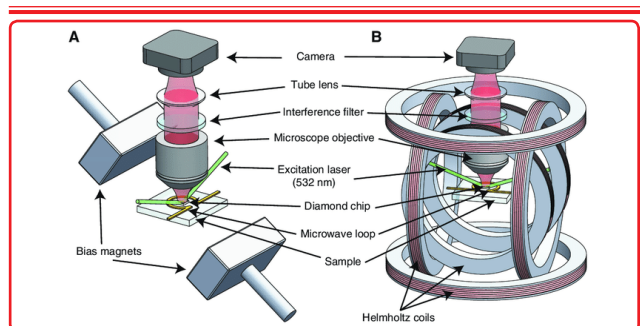
Why in news?

- Researchers from the Indian Institutes of Technology (IIT) at Mumbai and Kharagpur have built a microscope that can image magnetic fields within

microscopic two-dimensional samples that change over milliseconds.

Potential:

➲ This has a huge potential for scientific applications, such as in measuring biological activity of neurons and dynamics of vortices in superconductors.

➲ This is the first time that such a tool has been built to image magnetic fields that change within milliseconds.

Capturing change:

➲ The ideal frame rate to capture a changing magnetic field is one that captures data at twice the frequency of the changing field.

➲ Signals in nature exhibit a range of frequencies — magnetism in geological rock samples and rare earth magnets can be constant over months; magnetic nanoparticle aggregation inside living cells takes place in minutes; action potentials in neurons are fast, taking milliseconds, whereas precession of atomic spins in complex molecules takes only microseconds.

➲ The instrument that this team has built works in the millisecond range.

Nitrogen vacancy (NV) defect centre:

➲ The key aspect of this sensor is a "nitrogen vacancy (NV) defect centre" in a diamond crystal.

➲ Such NV centres act as pseudo atoms with electronic states that are sensitive to the fields and gradients around them (magnetic fields, temperature, electric field and strain).

➲ During the measurement of ultra-small magnetic fields, the change in the fluorescence levels is extremely small and therefore, limits the imaging frame rate and degrades the signal-to-noise ratio of the measurement.

➲ In order to overcome this limitation, the researchers employed a "lock-in detection scheme" which selects light fluctuations of a small frequency range, rejecting others, and thereby improving the sensitivity to small changes in fluorescence.

Improved frame rates:

➲ Earlier reported magnetic field imaging frame rates were close to 1-10 minutes per frame. This would increase to about half an hour per frame for challenging samples like biological cells.

➲ The instrument built by this group exhibits an imaging frame rate of about 50-200 frames per second, which would translate into a frame acquisition time of about 2-5 milliseconds.

➲ A special diamond crystal, one micrometre thick, embedded with a high density of such NV centres is created. This acts as a sensor when a thin two-dimensional sample is brought close to it — less than 10 micrometre.

➲ Using this technique, the researchers can image a 150 micrometre by 150 micrometre field of view, which is

quite an achievement.

Way Forward:

➲ The NV centre imaging technique is a unique tool in the context of imaging microscale magnetic field variations in any sample.

5G SPECTRUM BANDS &TELCOS

Why in news?

➲ Recently, the Union Cabinet approved auction of 5G spectrum bands, and has reserved a portion of airwaves for captive private networks, a proposal opposed by telecom service providers.

➲ The auction of over 72 GHz of airwaves is set to be held by the end of July.

What set the ball rolling for 5G technology in India?

➲ The Union government's delay in auctioning off spectrum bands is a result of its rounds of consultations with various stakeholders to decide on bands that can be sold, block sizes, and the reserve price.

➲ The telecom service providers are ready to commercially roll out 5G to customers. In January, Reliance Jio said it completed next generation network coverage planning for nearly 1,000 cities in the country.

➲ A year ago, Airtel demonstrated 5G over a live commercial network in Hyderabad. Vodafone, before its merger with Idea, in 2017 said it had "upgraded entire radio network to all-IP technology, ready even for 5G".

What are captive private networks and why do they need spectrum bands?

➲ Private wireless networks are cellular networks built specifically for individual enterprises. These networks are often deployed at a single unit, for example a factory. They can also be used in a wide-area setting, for instance to monitor a mine in real-time.

➲ Airports and ports can also have their own private 5G cellular network to process imaging data coming from surveillance cameras to manage the facility. Several enterprises around the world are working on setting up private 5G networks as they offer reliable, fast, and secure wireless communication.

➲ According to an Economist Impact survey of 216 technology executives in Germany, Japan, the U.K. and the U.S., over half said they plan to deploy a private 5G network within six-24 months.

➲ The key reason driving this adoption is the need for greater data privacy and security. Unlike unlicensed Wi-Fi service available at several private places, licensed spectrum bands offer greater data privacy, security and faster connection speeds.

How does Industry 4.0 relate to 5G?

➲ Cellular technology has come a long way in the last four decades. Each generation has added a layer of sophistication over another starting with voice. Over the years, three generations of cellular airwaves enabled users to text, use Internet and view live-streaming video all at the same time.

➲ Unlike its predecessors, the latest wireless iteration opens a new paradigm in cellular connectivity. That's because the true benefits of 5G largely apply to industrial enterprises than individual users.

➲ Think about industrial AI-enabled robots on shop floors and warehouses, autonomous vehicles on the road, and mixed-reality headsets with advanced mobile applications that train workers.

➲ Each of these scenarios require high-speed computing using real-time data at low latency. This is at the core of the fourth industrial revolution where devices talk to each other to perform various tasks.

➲ Big tech firms like Google have been seeking direct allocation of spectrum to use in machine learning applications, connected devices and general AI advancement.

How does the government plan to set aside spectrum for private network operators?

➲ The Department of Telecommunications (DoT) has said that private firms can set up a 5G network by either getting a slice of public network from a licensed telecom company, establishing an isolated on premises network from the telecom service provider's spectrum, or obtaining spectrum directly from the Department of Telecom or by sub-leasing it from telcos.

➲ The notice inviting the offer also states that spectrum auction to private enterprises will follow after a demand study and based on TRAI's recommendation on pricing and modalities of block allocations.

➲ The telecom regulator expects its recommendations to result in increased sharing of network resources.

Is it a setback for telcos?

➲ The Cellular Operators Association of India (COAI) is of the firm view that "there is no justification whatsoever for allocating spectrum to industry verticals for operating private captive networks."

➲ This stems from their concern that 5G technology has more industry use case than for individual consumers.

➲ So, telcos worry that providing industries 5G spectrum allocation to set up private networks will diminish their own revenue from the next generation of cellular services.

CAN VIRTUAL SERVERS BYPASS INDIA'S VPN RULES?

Why in news?

➲ In April, CERT-In passed a rule mandating VPN providers to record and keep their customers' logs for 180 days. It also asked these firms to collect and store customer data for up to five years.

➲ It further mandated that any cybercrime recorded must be reported to the CERT within 6 hours of the crime. The new directives, if passed, will be effective from June 28.

Scope:

➲ Computer Emergency Response Team (CERT-In) directions are applicable to data centres, virtual private server (VPS) providers, cloud service providers, virtual asset service providers, virtual asset exchange providers, custodian wallet providers and Government organisations.

➲ Firms that provide Internet proxy-like services through VPN technologies also come under the ambit of the new rule. Corporate entities are not under the scanner.

Response by VPN providers:

➲ In response to CERT-In rules, Nord VPN, one of the world's largest VPN providers, has said it is moving its servers out of the country.

➲ Two other firms, Express VPN and Surfshark, said they will shut down their physical servers in India and cater to users in India through virtual servers located in Singapore and UK.

What is a virtual server, and what are its uses?

➲ A virtual server is a simulated server environment built on an actual physical server. It recreates the

functionality of a dedicated physical server. The virtual twin functions like a physical server that runs software. It uses resources of the physical server. Multiple virtual servers can run on a single physical server.

- Virtualising servers helps reallocate resources for changing workloads. Converting one physical server into multiple virtual servers allows organisations to use processing power and resources more efficiently by running multiple operating systems and applications on one partitioned server.

- Running multiple operating systems and applications on a single physical machine reduces the cost as it consumes less space, hardware. Virtualisation also reduces cost as maintaining a virtual server infrastructure is low compared to physical server infrastructure.

- Virtual servers are also said to offers higher security than a physical server infrastructure as the operating system and applications are enclosed in a virtual machine. This helps contain security attacks and malicious behaviors inside the virtual machine.

- Virtual servers are also useful in testing and debugging applications in different operating systems and versions without having to manually install and run them in several physical machines. Software developers can create, run, and test new software applications on a virtual server without taking processing power away from other users.

Can server relocation and virtualisation help VPN providers circumvent the new rules?

- The FAQs published by the Ministry of Electronics and Information Technology (MeiTY) regarding the cybersecurity directions offers some clarity on the relocation and virtualisation.

- It says the rules are applicable to "any entity whatsoever" in the matter of cyber incidents and cyber security incidents, regardless of whether they have a physical presence in India or not, as long as they deliver services to Indian users.

- The service providers who do not have a physical presence in India but offer services to the users in the country, have to designate a point of contact to liaise with CERT-In.

- Also, logs may be stored outside India as long as the obligation to produce logs to CERT-In is adhered to by the entities in a reasonable time.

- VPN companies, like Surfshark, on the other hand believe that by removing their physical servers to countries outside India they will comply with the laws applicable to their activities.

How will the law impact India's IT sector?

- VPN suppliers leaving India is not good for its burgeoning IT sector. Taking such radical action that highly impacts the privacy of millions of people

in India will most likely be counterproductive and strongly damage the IT sector's growth in the country.

- It estimated that 254.9 million Indians have had their accounts breached since 2004 and raised its concern that collecting excessive amounts of data within Indian jurisdiction without robust protection mechanisms could lead to even more breaches.

- The Netherlands-based company further said that they have never received a similar directive on storing customer logs from any other governments in the world.

How does VPN usage work in China?

- Though not all VPNs are officially banned in China, only government-approved VPNs are officially permitted to function.

- Visitors and Chinese citizens use VPNs to circumvent China's Great Firewall, which has blocked access to many websites, keywords and even IP addresses.

- Government-approved VPNs have to register with the Chinese government and have to comply with data requests during investigations. However, cases of tourists being penalised for using non- government approved VPNs have not been reported.

INDIA'S FIRST MRNA VACCINE FOR COVID-19

Why in news?

- India's first home-grown mRNA Covid-19 vaccine, GEMCOVAC-19 developed at Pune's Gennova Biopharmaceuticals has got a 'restricted emergency use' nod for the 18-and-above age group.

Challenge:

- As mRNA vaccines are required to be kept at sub-zero temperatures, it was a mammoth task for Gennova scientists to develop a thermostable mRNA Covid-19 vaccine.

- Scientists had to innovate to suit local needs to make it affordable and deployable. The new vaccine can now be stored at the temperature of a standard medical refrigerator.

The mRNA platform:

- As the Covid-19 pandemic spread, an mRNA vaccine candidate was the first to enter human trials globally. The first two vaccines that were made available for use in the US were based on mRNA technology.

- Unlike vaccines that put a weakened or inactivated virus in body to activate an immune response, these two Covid-19 vaccines (Pfizer-BioNTech and Moderna) used messenger RNA or mRNA to deliver a message to immune system.

- Basically, thetechnology uses genetically engineered mRNA to instruct cells to make the S-protein found on the surface of the Covid-19 virus.

- After vaccination, the muscle cells begin making S-protein pieces and displaying them on cell surfaces. This causes the body to create antibodies.

◖ But these vaccines have to be stored at sub-zero temperatures as mRNA is fragile and breaks down easily.

Thermostable vaccine:

◖ Unlike in the West, where the vaccine has to be stored at sub-zero temperatures, the challenge in India was to be able to store the vaccine between 2-8 degree Celsius. GEMCOVAC-19 can now be stored at the temperature of a standard medical refrigerator.

◖ The conversion from liquid to powder form of the vaccine takes place via Lyophilisation — this is freeze-drying, a process where the water is removed from the product after it is frozen and placed under a vacuum allowing the ice to change directly from solid to vapor without passing through a liquid phase.

◖ However, just removing water by Lyophilisation of the mRNA vaccine does not work.

◖ So, the surrounding pressure has to be tweaked and then kept stable to ensure the characteristics of the vaccine are the same as before Lyophilisation.

◖ For this to be achieved, the key was to add an external agent which at a certain critical concentration keeps it stable under lyophilized conditions. The Lyophilisation technology is not new, but a lyophilized mRNA vaccine is unique.

Trials and safety:

◖ Freeze-drying the large and unstable mRNA molecule with the nanoparticle was a daunting challenge. However, Gennova invested countless man-hours in the hope of lyophilizing the mRNA vaccine in a single vial within a year.

◖ This thermostable vaccine was thoroughly tested in various animal models to ensure its safety and immunogenicity before entering human clinical trials.

◖ The trial data showed that the vaccine was safe and well-tolerated. Immunogenicity measured at 2 weeks post-dose showed that GEMCOVAC-19 is non-inferior to Covishield.

◖ The two-dose vaccine will have to be administered intramuscularly, 28 days apart.

Way Forward:

◖ For the first time, the mRNA platform has been used to develop a Covid-19 vaccine in India.

◖ Notably, this technology platform provides flexibility to quickly tweak the vaccine for any existing or emerging variants of the virus.

CULTURE

THE FOUR BUDDHA RELICS TRAVELLING TO MONGOLIA AS 'STATE GUEST'

Why in news?

◖ Four Holy Relics of Lord Buddha are being taken to Mongolia for an 11-day exposition to coincide with Mongolian Budhha Purnima celebrations.

◖ A 25-member delegation, led by Union Law Minister KirenRijiju, accompanied the relics, to be displayed at the Batsagaan Temple in Gandan Monastery complex in Ulaanbaatar.

The sacred relics:

◖ The four relics come from among 22 Buddha relics, currently housed at Delhi's National Museum.

◖ Together, they are known as the 'Kapilvastu Relics' since they are from a site in Bihar believed to be the ancient city of Kapilvastu. The site was discovered in 1898.

Historical aspects:

◖ At the age of 80, according to Buddhist beliefs, Buddha attained salvation in Uttar Pradesh's Kushinagar district. The Mallas of Kushinagar cremated his body with ceremonies befitting a universal king.

◖ His relics from the funeral pyre were collected and divided into eight shares to be distributed among the Ajathsatrus of Magadha, the Licchavis of Vaishali, the Sakyas of Kapilavastu, Mallas of Kushinagar, Bullies of Allakappa, the Mallas of Pava, the Koliyas of Ramagrama and a Brahmana of Vethadipa.

◖ The purpose was erecting stupas over the sacred relics. Two more stupas came up, one over the urn in which the relics had been collected and the other over the embers.

◖ Stupas erected over the bodily relics of Buddha (Saririka stupas) are the earliest surviving Buddhist shrines. It is said that Ashoka (272–232 BC), being an ardent follower of Buddhism, opened up seven of these eight stupas, and collected major portion of the relics for enshrinement within 84,000 stupas built by him in an effort to popularise Buddhism as well as the cult of the stupas.

The Kapilavastu relics:

◖ The discovery of an inscribed casket in 1898 at the stupa site in Piprahwa (near UP's Siddharthnagar) helped identify the place with the ancient Kapilavastu.

◖ The inscription on the casket's lid which refers to the relics of Buddha and his community, the Sakya, reads: 'Sukitibhatinamsa-bhaginikanamsa-puta-dalanamiy amsalilanidhareBhaddhasabhagavatesakiyanam.'

➲ It roughly translates to: "This shrine for relics of the Buddha, the August One, is that of the Sakyas. The brethren of the distinguished One, in association with their sisters and with their children and their wives."

Other Findings:

➲ According to records with the Ministry of Culture, this discovery was followed by many explorations.

➲ A further excavation of the stupa by the Archaeological Survey of India in 1971-77, apart from revealing three stages of the construction, brought to light two more steatite relic caskets, containing a total of 22 sacred bone relics, which are now under the care of the National Museum.

➲ This was followed by the discovery of more than 40 terracotta sealings from different levels and spots in the eastern monastery at Piprahwa saying, 'Om DevaputraVihareKapilavastusaBhikshuSanghasa', which means "community of Buddhist monks of Kapilavastu living in DevaputraVihara", and "MahaKapilavastuBhikshuSanghasa" in Brahmi script of 1st and 2nd centuries, which establish that Piprahwa was the ancient Kapilavastu.

'AA' category of Antiquities and Art Treasures:

➲ During the 11-day visit, the relics will be accorded the status of a 'state guest' in Mongolia and will be taken in the same climate control case in which they have been kept presently at the National Museum.

➲ For the visit, the Indian Air force has made available a special airplane, C-17 GlobeMaster, which is among the biggest aircraft available in India. Two bullet-proof casings as well as two ceremonial caskets are being carried by the Indian delegation for both the relics.

➲ In 2015, the Holy Relics were placed under the 'AA' category of Antiquities and Art Treasures which should not be ordinarily taken out of the country for exhibition, considering their delicate nature. But upon the request of Mongolian government, the government has made a special exception and permitted the exposition of the Holy Relics in Mongolia.

MISCELLANEOUS

SAGARMALA YOUNG PROFESSIONAL SCHEME

Why in news?

➲ Ministry of Ports, Shipping and Waterways has formulated scheme to engage talented, forward-thinking and dynamic young professionals in various divisions of the Ministry.

Focus:

➲ This scheme focuses on active on-the-ground learning for young professionals.

➲ The professionals will have the opportunity to learn about the functioning of the government as well as developmental policy concerns.

Salient features

➲ Professionals will be required to deliver high-quality inputs in areas such as infrastructure, data analysis, project management, start-up, innovation, skill development, digital transformation and the environment, among others, in order to meet Ministry's needs.

➲ The scheme will foster active involvement of young people in decision-making.

➲ This will further contribute to social wellness at an individual level, by boosting self-esteem and a sense of empowerment, and bring about crucial benefits for societies such as an enhanced awareness for common concerns and a joint resolve to identify solutions that work in the long term.

Qualifications required:

➲ Initially, more than 25 young professionals will be hired under this scheme. Professionals will be required to have qualification in B.E/ B.Tech, B. Planning and/or MBA or equivalent degree in relevant subject/ field and minimum three year of relevant work experience.

➲ Professionals in Accountancy, Finance, Legal, Statistics, Economics/Commerce, Data Analytics will also be engaged based on requirement of the Ministry.

Initial engagement:

➲ The initial period of engagement shall be 2 years which can be extended to additional 2 years on the basis of performance

➲ The advertisement inviting application will be posted on Web-Portal of the Ministry and National Career Service Portal of Ministry of Labour and Employment.

Way Forward:

➲ Engaging young people in government initiatives can increase their understanding and interest in administrative functioning, as well as encourage active citizenship.

➲ It will also raise awareness about maritime sector among youth.

PM CARES FOR CHILDREN SCHEME

Why in news?

➲ Recently, Prime Minister released benefits under the PM CARES for Children scheme and reiterated the Centre's commitment to providing other benefits under the scheme.

Background:

➲ More than 1.5 lakh children were orphaned, lost a parent or abandoned during the COVID-19 pandemic, as per the Ministry of Women and Child Development.

➲ This figure included children who lost their parent to causes other than COVID-19 as well. This was in response to a report in The Lancet which estimated that 19 lakh children in India lost either a parent or a primary caregiver due to COVID-19.

PM CARES FOR CHILDREN- EMPOWERMENT OF COVID AFFECTED CHILDREN LAUNCHED

- To CARE for the children who lost their parents due to Covid
- Monthly stipend once they turn 18
- Rs 10 lakh when they turn 23 from PM CARES
- Free education to be ensured for children
- Free health insurance of Rs 5 lakh under Ayushman Bharat till 18 years
- Premium will be paid by PM CARES
- Education loan for higher education & interest will be paid from PM CARES

What is the PM CARES for Children scheme?

- ⮑ Soon after India went into lockdown in March 2020, PM Narendra Modi announced a central fund to provide relief to those affected by emergencies like the pandemic.
- ⮑ The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund, or the PM CARES Fund, was registered as a Public Charitable Trust under the Registration Act, 1908.
- ⮑ The government launched the PM CARES for Children scheme in 2021 to support children who lost their parents to coronavirus between March 11, 2020 and February 28, 2022.

Eligibility:

- ⮑ As per the scheme guidelines, children who lost both parents, a surviving parent, legal guardian, adoptive parents or a single adoptive parent between March 11, 2020 and February 28, 2022 due to the pandemic are entitled to the benefits.
- ⮑ The child should have been below 18 years of age on the date of death of the parents.

Source of funds:

- ⮑ The Ministry of Women and Child Development, which is responsible for the scheme in coordination with States and District nodal agencies, coordinates with the PM CARES Fund for the release of funds to District Magistrates. The DMs then transfer funds to the accounts of each beneficiary.

Guidelines for the Scheme:

The main features include:

Financial assistance:

- ⮑ A corpus of Rs 10 lakh for each child when he or she reaches 18 years of age. From this corpus, the child will get monthly financial support or a stipend for daily needs from the age of 18, for the next five years. On attaining the age of 23 years, the child will receive the corpus as a lump sum amount for personal and professional use.
- ⮑ As per the PM's latest announcement, Rs 4,000 will be provided every month to these children through other schemes for their daily needs and a scholarship of Rs 20,000 per annum will be given for students of Classes 1-12.
- ⮑ They are also eligible for the Karma Scholarship for skills training, the Swanath Scholarship for Technical Education, and a scholarship of Rs 2.5 lakhs per year for studying in higher education institutions (IITs, IIMs) and an ex gratia amount of Rs 50,000.

Education:

- ⮑ Those under 10 years of age get admission to the nearest KendriyaVidyalaya or a private school. If the child takes private school admission, PM CARES will give fees as per Right to Education norms. The scheme will also take care of uniforms, textbooks and notebook expenditure.
- ⮑ Those between 11 and 18 years of age are eligible for admission in central government residential schools such as Sainik Schools and NavodayaVidyalayas.
- ⮑ Children will be assisted in obtaining education loans for professional courses or higher education in India as per existing education loan norms. The interest on these will also be paid by PM CARES.
- ⮑ Alternatively, beneficiaries may receive scholarships from various national schemes run by the Ministry of Social Justice and Empowerment, the Ministry of Tribal Affairs, the Ministry of Minority Affairs, and the Department of Higher Education. They will avail of these through the National Scholarship portal.

Health cover:

- ⮑ Under PM CARES, all children are to be enrolled as a beneficiary under the Ayushman Bharat Scheme (PM-JAY) with a health insurance cover of Rs 5 lakhs. PM CARES will pay the premium amount until the child is 18 years old.
- ⮑ The PM further stated that beneficiaries will get "emotional counselling through the Samvad helpline for psychological and emotional help".

The controversial PM CARES Fund:

- ⮑ The PM CARES Fund, which is the parent source of funds for the PM CARES for Children scheme, has been mired in controversy since its inception in 2020. From time to time, opposition leaders, experts and activists have questioned the transparency of donations and its use of the PM's name, photo, the national flag, emblem and the 'gov' domain.
- ⮑ Although the PM is the Chairman (ex-officio) of the fund and the Minister of Defence, Minister of Home Affairs and Minister of Finance are the fund's trustees,

the Centre has maintained that it is not a Government of India fund and isn't under the purview of the Right to Information (RTI) Act.

- Earlier in 2022, it was revealed that a third of the amount collected by the PM CARES Fund from its inception until March 2021 remained unspent. The audit report showed that the PM CARES Fund collected ₹10,990 crore between March 2020 and March 2021, but only spent ₹3,976 crore during the 2020-21 financial year.

THE ADVENT OF 'APP-SOLUTE' CHAOS IN NREGA

Context:

- In May 2021, the Ministry of Rural Development (MoRD) launched the National Mobile Monitoring Software (NMMS) app, a new application meant for "improving citizen oversight and increasing transparency" in National Rural Employment Guarantee Act (NREGA) works.

Deployed by

- It is to be deployed by NREGA Mates, local women at the panchayat level who are selected and trained to monitor NREGA worksites.

Features

- The main feature of the app is the real-time, photographed, geo-tagged attendance of every worker to be taken once in each half of the day.

How this app is affecting workers?

- While such an app may be useful in monitoring the attendance of workers who have fixed work timings, in most States, NREGA wages are calculated based on the amount of work done each day, and workers do not need to commit to fixed hours.

- This flexibility has been key to NREGA's widespread demand. However, marking attendance on the app mandates that workers are at the worksite the entire day. This causes significant difficulty for NREGA workers.

- NREGA has historically had a higher proportion of women workers (54.7% in FY 2021-22) and has been pivotal in changing working conditions for women in rural areas. Due to the traditional burden of household chores and care work on women, the app is likely to disproportionately affect women workers.

- The conditions for registering NREGA attendance on the app put them in a dilemma where they may end up foregoing NREGA work.

Other challenges:

- There are challenges of implementation with the NMMS as well. A stable network is a must for real-time monitoring; unfortunately, it remains patchy in much of rural India. This could lead to workers not being able to mark their attendance, and consequently lose a day of wages.

- Workers in Kerala and Jharkhand are already facing problems in uploading their attendance on the app due to network problems.

- Further, problems are being faced by differently-abled NREGA workers from Tamil Nadu in marking their attendance on the app.

Impact on NREGA Mates:

- The app has adversely impacted NREGA Mates as well. The role of a Mate was conceptualised as an opportunity to empower local women to manage attendance and work measurement in their panchayat. But now, to be a Mate, one needs to have a smartphone.

- This new condition disqualifies thousands of women who do not own smartphones from becoming Mates. Already women from Jharkhand and Andhra Pradesh have reported being passed over for selection as Mates for this very reason. Now, smartphone-owning men are likely to be given preference as Mates.

- Alternatively, women could become proxy Mates, officially registered, but deferring to men who work and get paid. Many selected Mates also reported that they had not been given proper training in using the app. This could lead to errors in recording workers' attendance, that ultimately results in delayed or non-payments.

No physical records:

- Beyond the problems in implementation, the intended purpose of such an application, and its effectiveness remain unclear.

- The app claims to "increase citizen oversight" by "bringing more transparency and ensuring proper monitoring of the schemes, besides potentially enabling processing payments faster". However, it appears to be doing exactly the opposite.

- With no physical attendance records signed by workers anymore, workers have no proof of their attendance and work done.

- In the district of West Singhbhum, Jharkhand, workers reported having worked on a NREGA project, the attendance records of which do not exist on the NREGA website.

➲ Since there are no physical records the workers can use as evidence, they have no way of proving their attendance, and will consequently lose out on pay for two full weeks of work. This is a clear erosion of the transparency and citizen oversight the app claims to improve.

Corruption:

➲ Corruption has been a rising problem in NREGA, with funds being siphoned off by faking attendance records.

➲ While ostensibly the NMMS's focus on real-time, geo-tagged attendance could be one way of addressing this corruption, the MoRD has not provided much clarity on either the magnitude of this corruption or the manner in which the NMMS addresses it.

➲ There are no parameters established to assess the app's performance, either on transparency, or on quicker processed payments.

Irony:

➲ It seems ironic that an application meant to improve citizen oversight and transparency was implemented with no consultation and discussion with NREGA workers, functionaries, or government field officials.

➲ The NMMS is consequently blind to the actual functioning of NREGA on the ground.

Way Forward:

➲ Instead of focusing on this app or introducing other complex technological reforms, it is strongly believed that social audits must be strengthened.

➲ Social audits are citizen-centric institutions, where the citizens of the panchayat have a direct role and say in how NREGA functions in their panchayat.

➲ Audits have worked well in the past, allowing the local rights holders to be invested in decisions, and hold the administration accountable themselves.

➲ But instead of strengthening citizen-centric institutions such as social audit units and gram sabhas, the MoRD seems keener on introducing technological reforms that can be complex to understand and fundamentally inaccessible for workers.
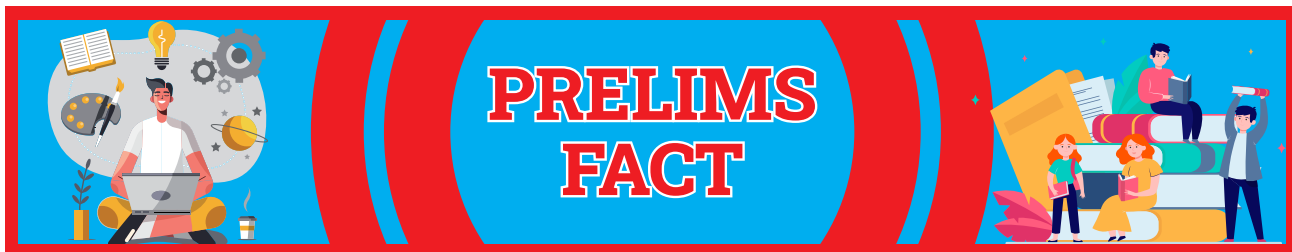
POLITY AND GOVERNANCE

AYUSHMAN BHARAT PRADHAN MANTRI JAN AROGYA YOJANA (PM-JAY) GETS REVAMPED

Why in news?

⮞ The National Health Authority (NHA) under its flagship scheme of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) announced the release of its newly revamped and dynamic public dashboard that provides a granular view of PM-JAY scheme implementation data in a comprehensive manner.

Key Highlights:

⮞ The dashboard is another step in the evolution of PM-JAY scheme that provides a transparent view about the progress of the scheme from a state/UT vantage point.

⮞ It has an interactive interface which displays key performance indicators about the scheme through informative charts.

⮞ It aims to provide deeper insights to the public and PM-JAY ecosystem stakeholders to understand the scheme's performance on a day-to-day basis.

Salient Features:

⮞ The newly updated dashboard provides detailed information about the number of Ayushman Bharat Cards created, empanelled hospitals and authorised hospital admissions amongst others at both national and state level.

⮞ It allows users to further view the data distributed according to gender and age. For e.g., in the 'Age Group' category under the 'Ayushman Cards Created' panel, the pie chart reveals that the highest number of Ayushman Card holders are between the age group of 30 to 44 years while the age groups falling between 15 to 29 years and 45-59 years are trailing close behind.

⮞ The dashboard also shows trends pivotable between types of time periods, i.e., either for last 7 days, 30 days or as aggregates since the launch of the scheme.

⮞ Another insight added to the dashboard is regarding top procedures and specialities availed by the beneficiaries at the empanelled hospitals under the scheme. This data is also pivotable between count of such treatments availed or amount authorized on such procedures.

⮞ Dashboard displays national as well as state level data for all these categories with an option to choose 'state' provided at top of the webpage.

⮞ Further, users can also search and view list of patients availing treatment under the scheme at any empanelled hospital spanning across hundreds of districts in India.

Pradhan Mantri Jan Arogya Yojna (PM-JAY)

⮞ The scheme was launched in September 2018 and recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC).

⮞ It is a Centrally Sponsored Scheme having a central sector component under Ayushman Bharat Mission

⮞ PM-JAY was earlier known as the National Health Protection Scheme (NHPS) before being rechristened.

⮞ It subsumed the then-existing Rashtriya Swasthya Bima Yojana (RSBY), which had been launched in 2008.

NATIONAL AIR SPORTS POLICY

Why in news?

⮞ The Minister of Civil Aviation launched National Air Sport Policy 2022 (NASP 2022).

Vision:

➲ NASP 2022 lays out the vision of making India as one of the top sports nations by 2030, by providing a safe, affordable, accessible, enjoyable and sustainable air sports ecosystem in India.

Key Objectives of NASP 2022

➲ Promote an air sports culture in the country.

➲ Enable adoption of international good practices in safety including but not limited to, air sports infrastructure, equipment, operations, maintenance and training.

➲ Develop a simple, stakeholder-friendly and effective governance structure.

➲ Enhance participation and success of Indian sportspersons in global air sports events.

➲ Promote design, development and manufacturing of air sports equipment in India in line with the Atmanirbhar Bharat Abhiyan.

Air sports & potential in India:

➲ Air sports encompasses various sports activities involving the medium of air. These include sports like air-racing, aerobatics, aero modeling, hang gliding, paragliding, para motoring and skydiving etc. India has the potential to be among the leading nations in the world of air sports.

➲ It has a large geographical expanse, diverse topography, and fair-weather conditions. It has a large population, especially the youth. It has a growing culture for adventure sports and aviation. The NASP 2022, is a step in this direction.

➲ It has been drafted based on the inputs received from policy makers, air sports practitioners and public at large and will ensure establishment of good quality of infrastructure, equipment, instructors and services.

The policy will cover the following air sports in India:

➲ Aerobatics

➲ Aero modeling and model rocketry

➲ Amateur-built and experimental aircraft

➲ Ballooning

➲ Drones

➲ Gliding and powered gliding

➲ Hang gliding and powered hang gliding

➲ Parachuting (including skydiving, BASE jumping and wing suits etc.)

➲ Paragliding and para motoring (including powered parachute trikes etc.)

➲ Powered aircraft (including ultra light, micro light and light sports aircraft etc.)

➲ Rotorcraft (including autogyro)

Four-tier governance structure:

➲ Under the new policy, there will be four-tier governance structure for air sports in India namely
   a) Air Sports Federation of India (ASFI) as the apex governing body

b) National associations for individual air sports or a set of air sports, as appropriate

c) Regional (e.g. West/ South/ North East etc.) or State and Union Territory level units of the national air sports associations, as appropriate; and

d) District-level air sports associations, as appropriate.

Way Forward:

➲ The policy will serve to attract air sports enthusiasts from all over the world, especially those who live in areas where harsh winters prevent them from participating.

➲ The air sports enthusiasts from Europe, North America, and Australia would flock to India to practice in the winters.

CENTRE AMENDS RULES FOR APPOINTMENT OF NEXT CHIEF OF DEFENCE STAFF

Why in news?

➲ The Ministry of Defence has issued a notification amending the rules of defence forces for the appointment of next Chief of Defence Staff (CDS).

Why amendment has been introduced?

➲ The post of Chief of Defence Staff has been lying vacant since the death of Gen Bipin Rawat in a helicopter crash on December 8, 2021.

➲ The changes made to the rules are seen as the government beginning the process to appoint the next Chief of Defence Staff amid the country facing myriad national security challenges.

➲ The government issued separate gazette notifications bringing the changes to the Air Force Act, the Army Act and the Navy Act providing for making any serving or retired Lt General, Air Marshal or Vice Admiral eligible to be appointed as the CDS.

Key Highlights:

➲ The amendment to the service rules of the Army, Navy and Air Force will make serving three-star officers and retired three-and four-star officers eligible for appointment as the next CDS.

➲ The government may consider officers who are serving as Lieutenant General equivalent, General equivalent or officers who have retired in the rank of Lt Gen or Gen but have not attained the age of 62 years, for the post of CDS.

⮣ For the Air Force, the government may consider an officer who is serving as Air Marshal or Air Chief Marshal or an officer who has retired in similar ranks but has not attained the age of 62 years on the date of appointment. Similar notifications have been issued for the Navy.

Tenure:

⮣ The government may extend the service of the Chief of Defence Staff for such a period as it may deem necessary subject to a maximum age of 65 years.

⮣ Identical notifications were issued under the Army Act 1950 and the Navy Act 1957.

⮣ The tenure of three service chiefs is three years of service or when they turn 62, whichever is earlier.

⮣ In effect, the recently retired Chiefs of the Army, the Navy and the Air Force are unlikely to be considered for the post of the CDS as the age to become eligible for the post has been put at 62 years.

⮣ The changes will allow recently retired former commander-in-chief rank officers as contenders as their retirement age is 60.

Office of the Chief of Defence Staff:

⮣ The office of the Chief of Defence Staff was one of the biggest military reforms and has resulted in more coordination in working between the government and the defence forces.

⮣ The defence forces in the country earlier used to go through bureaucracy to get their modernisation projects, promotions cleared, but ever since the Department of Military Affairs was formed, all these functions have come under the military domain.

⮣ The task of creating consensus on military issues among the three services has also been given to the CDS.

IS TYING THE KNOT A WAY TO UNTANGLE EVEN GRIEVOUS CASES?

Why in news?

⮣ Two recent decisions of the Supreme Court raise the question whether a convicted man can spare himself years of jail time by entering into what seems to be a rather opportune marriage with his victim or to a member of the victim's family.

Supreme Court intervention under Article 142:

⮣ In June, the apex court used its extraordinary power under Article 142 to release a man convicted of attempt to murder because he married his victim's sister while the case was still pending in the Madras High Court.

⮣ The top court noted that all the people involved were living in the same locality.

⮣ The parties involved had approached the court to set aside the conviction "in order to bring peace and in order to live cordially". The accused had spent just 18 months in jail.

⮣ In the peculiar facts and circumstances of this case, particularly when there is a marriage within the families of the injured and the accused, the court could exercise its power under Article 142 of the Constitution. Supreme Court therefore, permit the parties to compound the offence.

Another case of convict under POSCO:

⮣ The second case, in May, also from Tamil Nadu, concerned a man who was convicted under the Protection of Children from Sexual Offences (POCSO) Act for raping his minor niece. He had later married her.

⮣ Taking note that the custom of avunculate marriage existed in Tamil Nadu, the apex court set aside his conviction, reasoning that it did not want to "disturb" their "marriage" and "happy family life".

⮣ The court said its decision was based, again, on the "peculiar facts and circumstances of the case" and should not be used as precedent.

⮣ In both cases, the top court seems to have placed the idea of domestic stability above the punishment due to a convicted man.

Crime against women in India:

⮣ The National Commission for Women has reportedly marked a 30% rise in crime against women in 2021 compared with the 2020 figure, with more than half of them against their life and dignity. The NCW had received nearly 31,000 complaints of crimes committed against women in 2021.

WHY ARE EVMS NOT USED FOR PRESIDENTIAL ELECTION VOTING?

Context:

⮣ The electronic voting machines (EVMs), used in four Lok Sabha elections and 127 assembly polls since 2004, are not deployed in polls to elect the President and Vice President of India, members of the Rajya Sabha, and members of state legislative councils.

How EVMs work?

⮣ The EVMs are based on a technology where they work as aggregator of votes in direct elections such as the Lok Sabha and state assemblies.

➲ Voters press the button against the name of the candidate of their choice and the one who bags the maximum number of votes is declared elected.

System of Proportional Representation

➲ The election of the President is held in accordance with the system of proportional representation by means of single transferable vote.

➲ In accordance with the system of proportional representation by means of single transferable vote, every elector can mark as many preferences, as there are candidates contesting the election.

➲ These preferences for the candidates are to be marked by the elector, by placing the figures 1,2,3, 4, 5 and so on, against the names of the candidates, in the order of preference, in the space provided in column 2 of the ballot paper.

➲ The EVMs are not designed to register this system of voting. The EVM is an aggregator of votes and under the system of proportional representation.

➲ The machine will have to compute votes based on preference and it requires an altogether different technology. In other words, a different type of EVM would be needed.

When EVM was launched in India?

➲ Since 2004, EVMs have been used in four Lok Sabha and 127 assembly elections.

➲ First conceived in 1977 in the Election Commission, the Electronics Corporation of India Ltd. (ECIL), Hyderabad was assigned the task to design and develop it.

➲ In 1979 a prototype was developed, which was demonstrated by the Election Commission before the representatives of political parties on August 6, 1980.

➲ The Bharat Electronic Ltd (BEL), Bangalore, another public-sector undertaking, was co-opted along with ECIL to manufacture EVMs once a broad consensus was reached on its introduction.

EVMs in assembly election:

➲ The machines were first used in the assembly election in Kerala in May, 1982. However, the absence of a specific law prescribing its use led to the Supreme Court striking down that election.

➲ Subsequently, in 1989, Parliament amended the Representation of the People Act, 1951 to create a provision for the use of EVMs in elections.

➲ A general consensus on its introduction could be reached only in 1998 and these were used in 25 legislative assembly constituencies spread across three states of Madhya Pradesh, Rajasthan and Delhi.

➲ In the assembly elections held in May 2001 in the states of Tamil Nadu, Kerala, Puducherry and West Bengal, the EVMs were used in all the assembly constituencies.

➲ Since then, for every state assembly election, the Commission has used the EVMs.

➲ In the 2004 Lok Sabha polls, more than ten lakh EVMs were used in all 543 Parliamentary constituencies of the country.

FRUITS SOFTWARE

Why in news?

➲ Recently, Karnataka government has launched software for Aadhar-based, single-window registration for the schemes.

➲ The state departments of agriculture, horticulture, animal husbandry, revenue, food, civil supplies and fisheries departments of the state government are covered under the initiative.

What is FRUITS Software?

➲ The Farmer Registration & Unified Beneficiary Information System or FRUITS software, facilitates single registration using an Aadhar card and Karnataka's Bhoomi digitised land record system for authenticating ownership.

➲ Through the creation of single digital identification through FRUITS, farmers can access benefits of hosts of schemes such as Direct Benefit Transfer under PM Kisan, payment for Minimum Support Prices (MSPs) for crops, special financial assistance, caste certificate authentication and ration cards.

➲ The software allows various departments to access information about the farmers under a single platform, which ensures better targeting and effectiveness in the implementation of the schemes.

Bottom of Form:

➲ Using FRUITS data, the Karnataka government captures soil health and crop condition data using a GIS-based mobile app for three crop seasons— summer, Kharif and Rabi. This data is generated through local youth who are trained in using mobile applications for more than 2.1 crore agricultural plots in the state.

➲ This helps in assessing robust assessment of the production of various crops including paddy, ragi, jowar, tur, Bengal gram, ground nut and copra and helps in crop survey for settlements under the crop insurance scheme.

Background:

➲ The horticulture department of Karnataka started to use the software in 2017-18.

➲ Currently, all the other departments have adopted the usage of this software for cutting down multiple registration requirements for farmers for various schemes and helped better targeting. Officials said that several states have shown interest in replicating the FRUITS initiative.

➲ The software was also integrated with Karnataka State Natural Disaster Monitoring Centre, from which daily weather and rainfall data were provided to farmers based on their locations.

CHILDREN BORN OUTSIDE WEDLOCK ARE ELIGIBLE TO GET FAMILY PROPERTY: SC

Why in news?

⮞ Recently, setting aside a Kerala High Court order, the Supreme Court has ruled that the illegitimate children of a couple living together for a long time without getting married can have a share of the family property.

Details:

⮞ The apex court was dealing with a plea filed against the High Court order that denied the property share claim of an alleged illegitimate child citing the parents of the plaintiff did not engage in marriage.

⮞ However, observing that the couple was living together for a long time, it noted that their relationship is as good as marriage.

Key observations:

⮞ It is well settled that if a man and a woman live together for long years as husband and wife, there would be a presumption in favour of wedlock.

⮞ Such a presumption could be drawn under Section 114 of the Evidence Act. Although the presumption is rebuttable, a heavy burden lies on him who seeks to deprive the relationship of legal origin to prove that no marriage took place.

What was the case?

⮞ The Trial Court on examination of the evidence on record held that the couple Damodaranand Chiruthakutty was cohabiting for a long time.

⮞ According to the plaintiffs, Damodaran married Chiruthakutty in 1940. However, there is no direct evidence of their marriage. The first plaintiff Krishnan was born in the year 1942.

⮞ The court also referred to its earlier order in which it was stated that "Law leans in favour of legitimacy and frowns upon the bastardy."

STARTUPS FOR RAILWAYS

Why in news?

⮞ Recently, the Indian Railways, has taken an important initiative in field of innovation through participation of start-ups and other entities.

⮞ It has launched "StartUps for Railways" in Rail Bhavan, New Delhi.

Key Highlights:

⮞ Through this platform startups will get a good opportunity to connect with Railways.

⮞ Out of over 100 problem statements received from different divisions, field offices/zones of Railways, 11 problem statements like rail fracture, headway reduction etc. have been taken up for phase 1 of this program. These will be presented before the start ups to find innovative solutions.

Salient details of Indian Railway Innovation Policy are as under:

⮞ Grant up to ₹1.5 Crore to innovator on equal sharing basis with provision of milestone-wise payment.

⮞ Complete process from floating of problem statement to development of prototype is online with defined time line to make it transparent and objective.

⮞ Trials of prototypes will be done in Railways. Enhanced funding will be provided to scale up deployment on successful performance of prototypes.

⮞ Selection of Innovator/s will be done by a transparent and fair system which will be dealt through online portal inaugurated today by Minister of Railways.

⮞ Developed Intellectual property rights (IPR) will remain with innovator only.

⮞ Assured developmental order to innovator.

⮞ De-centralization of complete product development process at divisional level to avoid delays.

Way Forward:

⮞ This policy will bring scale and efficiency in the field of operation, maintenance and infrastructure creation through participation of very large and untapped startup ecosystem.

FIRST-EVER BALIKA PANCHAYAT

Why in news?

⮞ The Ministry of Women and Child Development is planning to begin the girl panchayat across the country.

Aim:

⮞ It aims to promote the social and political development of the girls and ensure their active participation of girls in politics.

First Ever 'Balika Panchayat' To Promote Girls Participation In Politics

Balika Panchayat:

➲ India's first-ever girl Panchayat, 'Balika Panchayat', which was started in several villages of Gujarat's Kutch district.

➲ This is a unique initiative of the Women and Child Development Welfare department of the Gujarat Government under the 'Beti Bachao Beti Padhao' campaign.

➲ It started in Kunaria, Maska, Motagua, and Vadsar villages of the Kutch district.

Administration:

➲ 'Balika Panchayat' is managed by people in the 11-21 age group.

➲ Its main objective is to promote the social and political development of the girl child and to remove the evil practices from the society such as child marriage, and the dowry system.

➲ In Balika panchayat, the member is nominated just like Gram panchayat."

Way Forward:

➲ The main objective of panchayat is that the girls should move forward in politics.

BAR CONTEST FROM 2 SEATS OR IMPOSE HEFTY FINE: EC

Why in news?

➲ Recently, the Election Commission (EC) has made a fresh push for amending law to bar people from contesting from more than one seat.

➲ It has said that if it cannot be done, then a hefty fine should be imposed on those vacating one of the constituencies and forcing a bypoll.

Existing law:

➲ As per the existing electoral law, a candidate is allowed to file nominations from two different constituencies in a general election or a group of bye-elections or biennial elections.

➲ Since one individual is allowed to represent only one constituency in a legislative or parliamentary body, he/she has to vacate the other seat in case victories were registered on both seats.

Amendment of Section 33(7) of the Representation of People Act, 1951:

➲ The EC has sought an amendment of Section 33(7) of the Representation of People Act, 1951 to restrict the number of seats a candidate can contest from.

➲ The Act currently allows a person to contest a general election or a group of by-elections or biennial elections from up to two constituencies.

Earlier Amendments to Section 33(7)

➲ Way back in 1996, the government had amended the Representation of the People Act to bar a person from contesting elections from more than two seats.

➲ Prior to the amendment, an individual was permitted to contest polls from as many seats as he wanted.

➲ In 2004, the EC proposed an amendment of Section 33(7) to certain sections of the Act so that a person cannot fight elections from more than one constituency at a time.

➲ The amount of fine then was proposed at Rs 5 lakh for state assembly and legislative council election and Rs 10 lakh for Lok Sabha election.

➲ The poll panel believes the amount should be appropriately revised.

Why EC sought amendment?

➲ The Commission believes that when a candidate contests from two seats, it is imperative that he has to vacate one of the two seats should he win both.

➲ This, apart from the consequent unavoidable financial burden on the public exchequer and the manpower and other resources for holding by-election against the resultant vacancy, would be an injustice to the voters of the constituency which the candidate is quitting from.

Response of Law Commission:

➲ The Law Commission, which advises government on complex legal issues, had supported the proposal of restricting candidates from more than one seat.

➲ However, it had not endorsed the Commission's alternative proposal to require winning candidates to deposit an appropriate amount of money being the expenditure for conducting the elections.

USE OF ICT IN SCHOOL EDUCATION IN INDIA RECEIVES UNESCO'S RECOGNITION

Why in news?

➲ Recently, use of ICT under a comprehensive initiative called PM eVIDYA by the Department of School education, Ministry of Education, particularly during the COVID-19 pandemic wins UNESCO's recognition.

About PM eVIDYA:

➲ The PM eVIDYA has been initiated as part of Atma Nirbhar Bharat Abhiyaan by the Ministry of Education on 17th May, 2020, which unifies all efforts related to digital/online/on-air education to enable multi-mode access for imparting education by using technology to minimise learning losses.

UNESCO's King Hamad Bin Isa Al-Khalifa Prize:

➲ The Central Institute of Educational Technology (CIET), a constituent unit of National Council of Educational Research and Training (NCERT) under Department of School Education and Literacy (DOSEL), Ministry of Education (MoE), has been awarded with the UNESCO's King Hamad Bin Isa Al-Khalifa Prize for the Use of ICT in Education for the year 2021.

About the Award:

➲ This award "recognizes innovative approaches in leveraging new technologies to expand educational and lifelong learning opportunities for all, in line with the 2030 Agenda for Sustainable Development and its Goal 4 on Education.

➲ Established in 2005 with the support of the Kingdom of Bahrain, the Prize rewards individuals and organizations that are implementing outstanding projects and promoting the creative use of technologies to enhance learning, teaching and overall educational performance in the digital age.

➲ An international Jury selects two best projects annually.

➲ Each prize winner receives US$ 25,000, a medal and a diploma during a ceremony at UNESCO Headquarters in Paris", which this year will be held on 24th June, 2022.

Initiatives of Ministry of Education through CIET:

➲ Keeping in view the recommendations of NEP-2020, Ministry of Education through CIET, NCERT has been working in designing, developing and disseminating a large number of eBooks, eContent - audios, videos, interactives, augmented reality contents, Indian Sign Language (ISL) videos, audiobooks, talking books, etc.; a variety of eCourses for school and teacher education; organizing digital events like online quizzes primarily for students and teachers through leveraging Online/Offline, On-Air technology One Class-One Channel, DIKSHA, ePathshala, NISHTHA, school MOOCs on SWAYAM, etc.

➲ To further the objectives of NEP & Samagra Shiksha and address the aforementioned pillars, PM eVidya-a comprehensive initiative which unifies all efforts and provides multi-mode access to digital/online/on-air education was launched in May 2020.

➲ The CIET was proactive in taking learning to the doorsteps of the children through the extensive, resilient, ethical, and coherent use of 12 PM eVidya DTH TV channels and nearly 397 radio stations, including community radio stations under PM eVidya program.

PARAMESWARAN IYER WILL BE NEW NITI AAYOG CEO

Why in news?

➲ Recently, V. Parameswaran was appointed as the new Chief Executive Officer (CEO) of the NITI Aayog.

➲ He replaces Amitabh Kant, who completes his term in the office on June 30.

About V. Parameswaran:

➲ At present, he functions as the Programme Manager of the 2030 Water Resources Group, a platform hosted by the World Bank for water conservation.

➲ He is a Professor at the Indian Institute of Management, Ahmedabad in management practices.

➲ In 2016, the government appointed Iyer to implement its Swachh Bharat Mission.

➲ In 2021, he resigned as Secretary of the Department of Drinking Water and Sanitation at the Jal Shakti Ministry.

About: Amitabh Kant

➲ He was appointed CEO of the National Institutions for Transforming India (NITI) Aayog on February 17, 2016, for two years. He got three extensions during his tenure.

➲ Under him, the NITI Aayog helped the Centre launch several programmes such as Digital India and Make in India.

NITI Aayog:

➲ NITI AYOG is a premiere policy think tank of the Government of India established in 2015 via an executive resolution by replacing the Planning Commission of India.

➲ This institution is chaired by the Prime Minister of India and the Chief Ministers of all states and Union territories along with the legislatures and Lt. Governors of other Union Territories.

➲ CEO will be appointed by the Prime Minister who is the chairman of NITI Aayog for a fixed tenure. He will be in the rank of Secretary to the Government of India.

ROE V. WADE, THE CASE OVERRULED BY US SUPREME COURT AFTER 50 YEARS

Why in news?

➲ The Supreme Court of the United States (SCOTUS) has privately voted to strike down the constitutional right to abortion as determined by the landmark Roe vs Wade case in 1973, according to a leaked draft opinion from February 2022.

➲ Also overturned, was Planned Parenthood v. Casey, a 1992 case that upheld Roe.

➲ Almost fifty years, after an American woman's constitutional right to abortion was recognised, the Supreme Court has effectively eliminated the right altogether, allowing states to enforce ban on abortions.

What is the Roe vs. Wade case?

➲ Roe, short for Jane Roe, is the pseudonym for a Texas woman named Norma McCorvey who in 1970 sought to have an abortion when she was five months pregnant, notwithstanding Texas' ban on abortions except to save a mother's life.

➲ Wade refers to Henry Wade, the district attorney in Dallas County, Texas, at the time, who was the defendant in the case.

➲ The 7-2 majority opinion of the SCOTUS was written on January 22, 1973, by Justice Harry Blackmun, paving the way for the recognition of abortion as a constitutional right in the U.S., effectively striking down a wide range of state-level abortion limitations applied before foetal viability.

➲ Foetal viability is the point at which a foetus can survive outside the womb, at the time considered to be around 28 weeks, but today is closer to 23 or 24 weeks owing to advances in medicine and technology.

Judgment in Roe vs Wade case:

➲ Based on the Roe vs Wade case, the framework of regulations that applied towards the right to abortion required that in the first trimester, almost no limitations could be placed on that right; in the second trimester, only limitations to abortion rights that were aimed at protecting a woman's health were permitted; and in the third trimester, state governments had greater leeway to limit the right to abortion except for cases in which the life and health of the mother were endangered.

➲ However, Roe vs Wade was not the last word on abortion rights in the U.S. even before the latest SCOTUS opinion.

➲ In the 1992 Planned Parenthood vs Casey case, the SCOTUS threw out the so-called trimester framework yet retained the Roe vs Wade case's "essential holding," which established women's constitutional right to abortion until foetal viability.

Why is there a possibility of the judgment being overturned?

➲ The overturning of the Roe vs Wade case has not yet been formally announced and thus not yet a part of settled law, although most legal experts believe it is only a matter of time before it becomes so.

➲ It remains to be seen whether the leaked text of the private opinion of the SCOTUS, believed to be authored primarily by Justice Samuel Alito, will be the same as the final version that enters the statute books.

➲ Nevertheless, the conservative majority of the court, to which former President Donald Trump successfully nominated three justices, regarded Roe vs Wade to lack any jurisprudential basis within the U.S. Constitution.

➲ Hence in the first draft of their opinion, dated February 2022, the justices of the SCOTUS said, "We hold that Roe and Casey must be overruled. The Constitution makes no reference to abortion, and no such right is implicitly protected by any constitutional provision. It is time to heed the Constitution and return the issue of abortion to the people's elected representatives."

What impact will the opinion have if it passes into law?

➲ Based on analysis of data from the Centers for Disease Control and Prevention, reports have shown that the typical patient seeking an abortion in the U.S. is already a mother, is in her late 20s, has obtained some college education, is relatively poor, is unmarried, is in her first six weeks of pregnancy, is seeking a first abortion, and lives in a Democratic Party-ruled state.

➲ At a broad level, therefore, the SCOTUS opinion will disproportionately affect poorer women if it becomes law.

➲ For example, in 2014, nearly 50% of women who went in for abortions were below the poverty line, with another 25% said to be relatively close to the poverty line.

➲ Reports quoted researchers saying that the growing share of poorer women in the abortion demographic "reflects improved access to effective contraception among higher-earning women, and a recognition of the growing costs of raising children among poorer women. It may also reflect the growing presence of

charities that help poor women pay for abortions in states where public programs don't."

What's next?

➲ However, all is not lost for the pro-choice side of the debate, because even if the SCOTUS successfully strikes down Roe vs Wade U.S. President Joe Biden has called upon Congress to pass legislation codifying the right to abortion, which lawmakers have every right to do.

➲ Yet, given the 50-50 split of Democratic and Republican Senators on Capitol Hill, it is near impossible to rally together the requisite 60-member supermajority required to pass abortion rights into law in the face of lock-step opposition from conservatives.

➲ Democrats are likely pinning their hopes on the November mid-term election sweeping more of their members into the Senate and thus restoring a constitutional right to abortion.

JUVENILE JUSTICE (CARE AND PROTECTIONS) ACT 2021 & CHALLENGES

Context:

➲ Reporting instances of abuse and cruelty by staffers or persons in-charge at child care institutions (CCI) is not easy.

➲ While the victims themselves are unable to directly report them due to the imbalance in power, most such crimes are reported to the police by either parents or child rights bodies and child welfare committees (CWC).

JUVENILE JUSTICE AMENDMENT BILL, 2021

➲ On the one hand, the parents of these children, who are mostly daily wage labourers, are either unaware of how to, or not inclined to, report the crimes to the police.

➲ On the other hand, the CWCs' first instinct in most cases is to "talk and arrive at a settlement" without having to escalate the matter to the police.

Response of various State Commissions for the Protection of Child Rights:

➲ State Commissions for the Protection of Child Rights in Delhi, Punjab, Chandigarh, Rajasthan and West Bengal have already publicly spoken out against the 2021 JJ Act amendment and have even flagged it to the Union government.

➲ Moreover, the Delhi Commission for the Protection of Child Rights has also challenged the amendment in the Supreme Court.

Section 86 of the JJ Act:

➲ Specifically, the amendment under challenge is the one to Section 86 of the JJ Act, according to which crimes under the special law, with punishment between three to seven years, have been reclassified as non-cognisable.

➲ These crimes include cruelty to children by CCI staff (Section 75), employment of children for begging (Section 76), using children to smuggle or sell intoxicating substances and narcotics (Section 78), sale and procurement of children (Section 81), exploitation of child employees (Section 79), use of children by militant or other groups for illegal purposes (Section 83), and giving children intoxicating/psychotropic substances or narcotics (Section 77).

Delay in FIR:

➲ The current system of reporting crimes committed by staff at CCIs already causes delays in registering FIRs (first information report) and sometimes FIRs not being registered at all.

➲ According to the Code of Criminal Procedure, once the crimes are rendered non-cognisable, the police will be able to register an FIR only on the directions of a magistrate and a complainant will first have to approach the magistrate concerned to start the process.

➲ Most children at CCIs whose parents are daily-wage labourers do not want to engage with the legal process because that would force them to take time off from work, resulting in loss of wages.

NATIONAL E-GOVERNANCE SERVICE DELIVERY ASSESSMENT (NESDA) 2021 REPORT

National e-governance service delivery assessment (NeSDA)

Why in news?

➲ Recently, the National e-Governance Service Delivery Assessment (NeSDA) 2021 report was released.

➲ It is an initiative of the Centre's Department of Administrative Reforms and Public Grievances.

- Rajasthan has been rated a leading state in delivering online services to citizens Grievances.

Parameters:

- NeSDA 2021 covers services in seven sectors: finance, labour and employment, education, local governance and utility services, social welfare, environment, and tourism.

The portals assessed were classified into two categories:

- One is the state/UT/central ministry portal: the one that provides single-window access to information and service links. These portals were assessed on four parameters: accessibility, content availability, ease of use and information security, and privacy.
- The second category comprises the state/UT/ central ministry services portals, which focus on the digital delivery of services and give service-related information.
- They were assessed on three additional parameters: end-service delivery, integrated service delivery, and status and request tracking.
- The categories in 2021 were "North-East & Hill States" (10), "Union Territories" (8), "Remaining States -- Group A" (10), and "Remaining States -- Group B" (8).

Rajasthan top ranker:

- Rajasthan ranks first in state/UT service portals in Group B across all sectors (55 services provided online). The score in 2019 was 0.61, which increased to 0.76 in 2021.
- The sectors that saw improvement include finance, labour and employment, education, local governance and utility services, and environment.
- The state ranks second in finance (14 services provided online) with a score of 0.68, and first in labour and employment (seven services provided online) with 0.91.
- Similarly, it ranks first in education (four services provided online) with 0.64.
- It stands first also in social welfare (including health, agriculture, and home security) with 0.61; second in local governance and utility services (13 services included online) with 0.75; third in environment (four services provided online) with 0.84, and first in tourism (two services provided online) with 0.88.
- Rajasthan comes eighth in the state portal overall score, which from 0.36 in 2019 increased to 0.50 in 2021.

Other winners:

- Nagaland was in first position in "North-East and Hill" states.
- Jammu & Kashmir was ranked first among the Union Territories.
- Kerala was first in "Remaining States - Group A.
- Odisha came on top among "Remaining states - Group B.

'DAK KARMAYOGI' PORTAL

भारतीय डाक

India Post

DAKS KARMAYOGI

An e-learning Platform of Department of Posts Government of India

Why in news?

- Recently, 'Dak Karmayogi', an e-learning portal of the Department of Posts was launched.

'Minimum Government' and 'Maximum Governance':

- This portal has been developed 'In-House' under vision of 'Mission Karmayogi', which was conceptualized by Prime Minister Shri Narendra Modi with a view to bring efficiency in actions of all the employees of Government of India and transforming efficiency of bureaucracy with 'Minimum Government' and 'Maximum Governance'.

Functions:

- 'Dak Karmayogi' portal will enhance the competencies of about 4 lakh Gramin Dak Sevaks & Departmental employees by enabling the trainees to access the uniform standardized training content online or in blended campus mode to enable them to effectively deliver a number of G2C services for enhanced customer satisfaction.
- On successful completion of final summative assessment, a system generated course completion certificate will be sent on trainee's registered email ID automatically.
- Trainees can give their feedback, ratings and suggestions for each and every video and other learning content so that necessary enrichment can be ensured.

'Any-time, Any-where' training:

- Department of Posts has been imparting training to its employees through its network of 10 Postal Training Centres/Regional Training Centre and Rafi Ahmed Kidwai National Postal Academy (RAKNPA), a Central Training Institute.
- However, with the launch of this portal, Departmental employees and Gramin Dak Sevaks will be able to avail training 'Any-time, Any-where' and upgrade their Attitude, Skill and Knowledge (ASK), as per their convenience.

Meghdoot Awards:

- To recognise the good performance of employees of Department of Posts and motivate them to maintain

or improve their good work, Meghdoot Awards were also conferred in eight different categories.

⊃ Meghdoot Award was introduced in the year 1984. This is the highest award of Department of Posts at National level for overall performance and excellence. This award is conferred in eight categories. Awardees are conferred with medallion, certificate and cash award of ₹ 21,000/-.

INTERNATIONAL RELATION

TRAINS START ROLLING AS INDIA, BANGLADESH REBOOTS LINKS POST PANDEMIC

Why in news?

⊃ The Jalpaiguri-Dhaka Mitali Express will be flagged off on its maiden commercial run by the Railways Ministers of India and Bangladesh.

⊃ This will be the third train in three days to begin running be- tween the countries as international surface transport links return to normal after the disruption caused by the Covid-19 pandemic.

⊃ Passenger train services between India and Bangladesh were resumed, more than two years after they were stopped on March 28, 2020-the Bandhan Express set off from Kolkata for Khulna, and the Maitree Express started from Dhaka for Kolkata.

Bandhan Express:

⊃ The Bandhan Express reboots an Old rail link between Kolkata and the industrial hub of Khulna, the third-largest city of Bangladesh.

⊃ Until the 1965 war between India and Pakistan, this route was served by the Barisal Express.

⊃ It was restarted the service in 2017.

Maitree Express:

⊃ The Bandhan was the second train to roll between India and Bangladesh after the Maitree Express between Kolkata and Dhaka Cantonment, which started in April 2008.

⊃ The Maitree, which has the capacity to carry 456 passengers has been a success since its launch. Before the pandemic hit, the tri-weekly service ran with 90 per cent occupancy.

Mitali Express:

⊃ The Mitali Express, announced by Prime Minister Narendra Modi during his visit to Dhaka in March 2021, will connect North Bengal with the Bangladesh capital.

⊃ The biweekly train is expected to cover the 500 odd-km distance between New Jalpaiguri and Dhaka in approximately nine hours.

Freight trains:

⊃ The governments of the two countries have been working towards strengthening freight train links as well.

⊃ In August 2021, the two sides started regular movement of freight trains between the newly-restored link between Haldibari in Cooch Behar district and Chilahati in Bangladesh.

⊃ The Haldibari-Chilahati rail link too stopped after the 1965 war. At the time of Partition, this was part of the main broad gauge line from Kolkata to Siliguri.

⊃ The two sides envisage at least 20 freight trains crossing the border at this point every month.

Rail infrastructure:

⊃ Once part of a single, seamless railway network under the British, trains continued to pass between India and what was then East Pakistan even after Partition.

⊃ A broad railway infrastructure was already in place, and policymakers on both sides viewed this as an opportunity to deepen ties using cross-border movements of goods and passengers.

⊃ Five railway border crossings have been rebooted so far: Petrapole (India)-Benapole (Bangladesh), Gede (India)-Darshana (Bangladesh), Singhabad (India)-Rohanpur (Bangladesh), Radhikapur (India)-Birol (Bangladesh), and Haldibari (India) Chilahati (Bangladesh).

Way Forward:

⊃ Ordinarily, cargo such as stone chips, ballasts, and rice has been carried to Bangladesh from India. Railway PSU CON COR has also started moving containers with fast moving consumer goods (FMCG) for private clients.

⊃ The idea is to establish faster and cheaper rail freight links and reduce the dependence on the sea route.

CABINET APPROVES MOU BETWEEN INDIA AND UNITED ARAB EMIRATES (UAE)

Why in news?

⊃ The Union Cabinet has approved the proposal for signing a bilateral Memorandum of Understanding (MoU) between India and the United Arab Emirates (UAE) on Cooperation in the field of Industries and Advanced Technologies.

Key Highlights:

⊃ The MoU aims at strengthening and developing industries in both nations through investments, technology transfer and the deployment of key technologies in industries. This is likely to generate employment across the economy.

⊃ The implementation of MoU may lead to increase in research and innovation in all areas of mutual cooperation, particularly in the areas of Renewable Energy, Artificial Intelligence, Industry Enabling technologies and Health and Life science.

⊃ This may lead to growth of these sectors, increased domestic production, enhanced exports and reduction in imports.

The MoU envisages cooperation on a mutually beneficial basis in the following areas:

Strengthening the Supply Chain Resilience of Industries	→	Renewable & Energy Efficiency
Health and life sciences	→	Space Systems
Artificial Intelligence	→	Industry 4.0 Enabling Technologies
Standardization, metrology, conformity assessment, accreditation, and Halal certification		
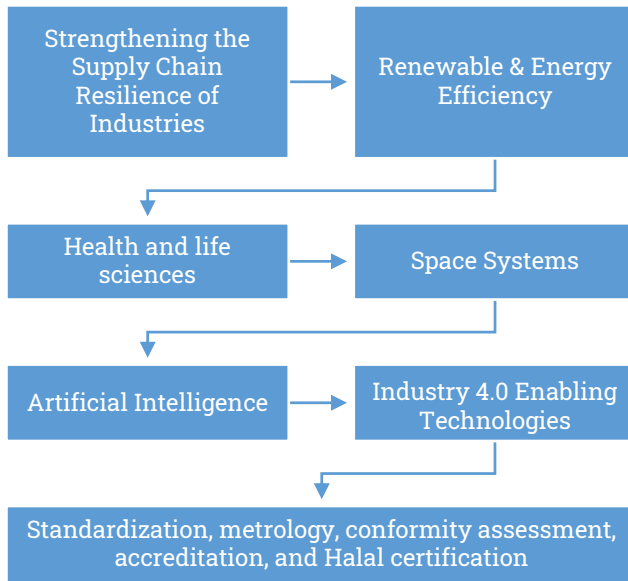
India-UAE bilateral trade:

- Growing India-UAE economic and commercial relations contribute to the stability and strength of a rapid diversifying and deepening bilateral relationship between the two countries.
- India-UAE bilateral trade, valued at US$ 180 million (₹1373 crore) per annum in the 1970s has increased to US$ 60 billion (₹4.57 lakh crore) making the UAE, India's third largest trading partner for the year 2019-20 after China and the US.
- Moreover, the UAE is the second largest export destination of India (after US) with an export value of US$ 29 billion (₹2.21 lakh crore) for the year 2019-2020.
- The UAE is eighth largest investor in India with an estimated investment of US$ 18 billion (Rs.1.37 lakh crore). Indian investments in the UAE are estimated at around US$ 85 billion (Rs.6.48 lakh crore).
- India and the UAE have signed a bilateral "Comprehensive Economic Partnership Agreement" (CEPA) on 18th March 2022. This agreement has potential to increase trade between India and the UAE from US$ 60 billion (₹ 4.57 lakh crore) to US$ 100 billion (₹ 7.63 lakh crore) in the next five years.

Way Forward:

- Signing of the MoU will result in fulfilling the goal of Atmanirbhar Bharat, a clarion call given by Prime Minister of India in making India a self-reliant nation.

AUSTRALIA-INDIA WATER SECURITY INITIATIVE (AIWASI)

Why in news?

- The Union Cabinet was apprised the Memorandum of Understanding between the Ministry of Housing and Urban Affairs (MoHUA), Government of India

and Department of Foreign Affairs and Trade (DFAT), Government of Australia for Technical Cooperation in urban water management.
- The MoU has been signed in December 2021.

Key Highlights

- Urban water management.
- Improve accessibility.
- Affordability & quality of water and sanitation services.
- Promote circular economy of water & water secure cities.
- Encourage climate resilient water management practices.
- Enhance community participation in water management.
- Improve social inclusion through initiatives for accessible infrastructure.

Way Forward:

- MoU will enable both sides to learn about technological advancements gained by two nations in key areas of urban water security and will promote exchange of learning, best practices and capacity building of institutions.
- This will help towards realisation of AatmaNirbhar Bharat.

IN A FIRST, NEW ZEALAND PROPOSES TO TAX FARMERS FOR LIVESTOCK BURPS

Why in news?

- New Zealand will tax burps by cattle and sheep in order to tackle one of its biggest sources of greenhouse gas emissions.

Highlights of New Draft:

- Farmers whose farms produce gas will be taxed from 2025. But those farmers who reduce emissions through feed additives, will get incentives. They can also use on-farm forestry to offset emissions.
- Revenue from the scheme will be invested in research, development and advisory services for farmers.

Livestock in New Zealand:

- New Zealand has more cattle and sheep than people; 10 million and 26 million respectively, against 5 million. It is a large agricultural exporter, with nearly half of its emissions, mainly methane, coming from agriculture.
- The country had not taxed its emissions from agriculture till now. The latest plan, if implemented, will make New Zealand the first country in this respect.

Why Methane?

- Methane, or CH_4 is one of the primary greenhouse gases, along with carbon dioxide or CO_2. Methane in the atmosphere reached record levels in 2019.

➲ Over a 100-year period, it (methane) is 28-34 times as warming as CO_2. Over a 20-year period, it is around 84 times as powerful per unit of mass as carbon dioxide.

Methane is a major contributor to global warming
Contribution to warming in degrees Celsius
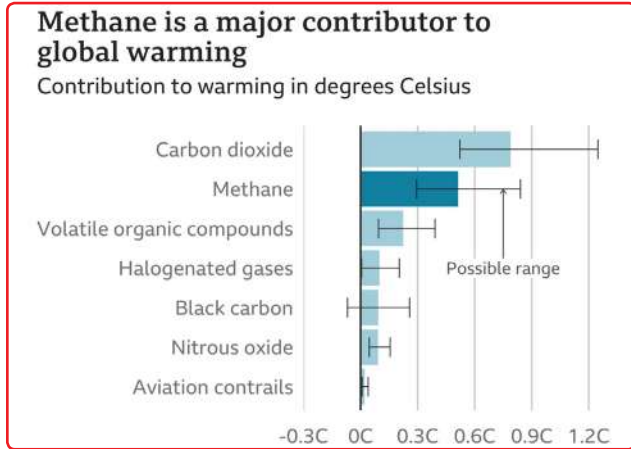
Anthropogenic sources of methane:

➲ Most methane emissions now come from agriculture such as cattle and rice production as well as rubbish dumps.

Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions report:

➲ Human-caused methane emissions must be cut by 45 per cent to avoid the worst effects of climate change, Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions a report released by the Climate and Clean Air Coalition and the United Nations Environment Programme had said.

➲ Such a cut would prevent a rise in global warming by up to 0.3 degrees Celsius by 2045.

➲ It would also prevent 260,000 premature deaths, 775,000 asthma-related hospital visits annually, as well as 25 million tonnes of crop losses.

38TH INDIA-INDONESIA COORDINATED PATROL (IND-INDO CORPAT)

Why in news?

➲ The 38th India-Indonesia Coordinated Patrol (IND-INDO CORPAT) between the Indian Navy Units of Andaman & Nicobar Command (ANC) and Indonesian Navy is being conducted in the Andaman Sea and Straits of Malacca.

➲ The 38th CORPAT is the first post pandemic Coordinated Patrol (CORPAT) between the two countries.

Vision SAGAR:

➲ It includes a visit by the Indonesian Navy units to ANC at Port Blair followed by a Sea Phase in the Andaman Sea and visit by IN Units to Sabang (Indonesia).

➲ As part of Government of India's vision of SAGAR (Security And Growth for All in the Region), Naval Component under the aegis of HQ ANC undertakes coordinated patrols with other littoral countries of the Andaman Sea along respective Exclusive Economic Zones (EEZ) towards enhancing regional maritime security.

Background:

➲ India and Indonesia have enjoyed especially close relations, covering a wide spectrum of activities and interactions which have strengthened over the years.

➲ The two Navies have been carrying out CORPAT along their International Maritime Boundary Line (IMBL) since 2002.

➲ This has helped build understanding and interoperability between both the Navies and has facilitated measures to prevent and suppress Illegal Unreported Unregulated (IUU) fishing, drug trafficking, maritime terrorism, armed robbery and piracy, etc.

Way Forward:

➲ The IND-INDO CORPAT contributes towards forging strong bonds of friendship across the Andaman Sea and Straits of Malacca.

➲

UNGA ADOPTS RESOLUTION ON MULTILINGUALISM, MENTIONS HINDI FOR FIRST TIME

Why in news?

➲ In a significant initiative, the United Nations General Assembly (UNGA) has adopted an India-sponsored resolution on multilingualism that mentions the Hindi language for the first time.

➲ The resolution encourages the UN to continue disseminating important communications and messages in official as well as in non-official languages, including in Hindi language.

Official languages:

➲ Arabic, Chinese, English, French, Russian and Spanish are the six official languages of the United Nations; English and French being the working languages of the United Nations Secretariat.

'Hindi @ UN' project:

➲ India has been partnering with the UN Department of Global Communications (DGC) since 2018 by providing an extra-budgetary contribution to mainstream and

consolidate news and multimedia content in the Hindi language.

➲ As part of these efforts, 'Hindi @ UN' project was launched in 2018 with an objective to enhance the public outreach of the United Nations in the Hindi language, and to spread greater awareness about global issues among millions of Hindi-speaking populations around the world.

Multilingualism in UN:

➲ UNSC resolution 13(1) adopted in its first session on 1 Feb. 1946, which stated that the United Nations cannot achieve its purposes unless the people of the world are fully informed of its aims and activities.

➲ Multilingualism is an essential factor in harmonious communication among peoples and an enabler of multilateral diplomacy. It ensures effective participation of all in the Organization's work, as well as greater transparency and efficiencies and better outcomes.

➲ Multilingualism is recognized by the General Assembly as a core value of the Organization. As such, all United Nations Secretariat entities are expected to contribute actively and demonstrate their commitment to this joint endeavor. Multilingualism mandates also call for the mainstreaming of multilingualism throughout the Secretariat.

EGYPT, ISRAEL TO BOOST GAS SUPPLY TO EUROPEAN UNION AMID UKRAINE WAR

Why in news?

➲ Recently, Egypt, Israel, and the European Union signed a deal to increase liquified natural gas sales to European Union (EU) countries, who aim to reduce dependence on supply from Russia.

➲ The deal will see Israel sending more gas via Egypt, which has facilities to liquify it for export via sea.

➲ In 2021, the EU imported roughly 40% of its gas from Russia and due to that has had difficulty imposing sanctions on Russia over its ongoing invasion of Ukraine.

How gas will be imported from Israel?

➲ The Israeli gas will be brought via a pipeline to Egypt's LNG terminal on the Mediterranean before being transported on tankers to the European shores.

➲ Israel has two operational gas fields off its Mediterranean coast containing an estimated 690 billion cubic metres of natural gas combined, and a third offshore rig is in the works.

➲ It has already signed gas export agreements with neighbouring Egypt and Jordan.

➲ Egypt's extensive natural gas facilities on the Mediterranean have stood largely inactive since the country's 2011 uprising that toppled Hosni Mubarak.

Developments by Egypt:

➲ In recent years, the government of Egypt rehabilitated and modernised the facilities.

➲ In 2018, Egypt signed a $15 billion deal with Israeli company Delek Drilling and its U. S. partner, Noble Energy to transport natural gas there. Egypt aims to create a regional energy hub.

INDIA RAISES CONCERN AT UNSC OVER HAITI'S MULTI-DIMENSIONAL CHALLENGES

Why in news?

➲ Recently, India raised concern over the multi-dimensional challenges Haiti faces in the backdrop of natural calamities and political turmoil at the United Nations Security Council (UNSC).

Background:

➲ The resilience of the people of Haiti has been tested repeatedly by unpredictable political developments and tragic national calamities.

➲ In 2021, Haiti faced challenges on both of these fronts. The assassination of President Jovenel Moise in July 2021 and the devastating earthquake of high magnitude followed by a hurricane in August, all these calamities have exaggerated the humanitarian crisis.

Current Situation

➲ The dire humanitarian situation has been further complicated by the prevailing situation of economic stagnation.

➲ The restoration of law and order remains one of the biggest impediments to Haiti's progress.

➲ The persisting gang-related violence and kidnappings, including in the capital Port of Prince have further contributed to a prevailing sense of insecurity.

➲ In some instances, UN personnel have also been targeted

India's role:

➲ India's contribution to deflating the persistent problems in Haiti is commendable.

➲ India has been a major Troop Contributing Country to UN Peacekeeping Operations in Haiti and has also contributed 3 Formed Police Units (FMUs) to United Nations Stabilizing Mission in Haiti (MINUSTHAH).

About Haiti:

➲ Haiti is a country in the Caribbean Sea that includes the western third of the island of Hispaniola and such smaller islands as Gonâve, Tortue (Tortuga), Grande Caye, and Vache. The capital is Port-au-Prince.

INDIA BACKS CHINA'S PLAN FOR JOINT BORDER ACTIVITY

THE SHANGHAI COOPERATION ORGANISATION

Why in news?

➲ India has supported an initiative by China to conduct a "joint border operation" in 2023 of all member countries of SCO (Shanghai Cooperation Organisation).

➲ The border operation called "Solidarity-2023" will be organised by China.

21st meeting of Experts' Group and Border Security Conference of SCO:

➲ The BSF hosted the 21st meeting of Experts' Group and Border Security Conference of SCO countries that was attended by China, Pakistan, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and the Executive Committee of the Regional Anti-Terrorist Structure (RATS)-SCO.

➲ They exchanged information reflecting assessments of the situation on the State borders of the SCO member states, trends and forecasts of its development.

➲ They noted that the professional exchange of views and the development of common positions on countering new challenges and threats at the borders of the Organization will contribute to the further development of cooperation between the border services of the competent authorities of the SCO member states, strengthening security and confidence at the borders.

About Shanghai Cooperation Organization (SCO)

➲ SCO is a permanent intergovernmental international organization.

➲ It's a Eurasian political, economic and military organization aiming to maintain peace, security and stability in the region.

➲ It was created in 2001.

➲ The SCO Charter was signed in 2002 and entered into force in 2003.

➲ Prior to the creation of SCO in 2001, Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.

➲ Following the accession of Uzbekistan to the organization in 2001, the Shanghai Five was renamed the SCO.

➲ India and Pakistan became members in 2017.

➲ On 17th September, 2021, it was announced that Iran would become a full member of the SCO.

➲ Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India, Pakistan and Iran are its member.

CHINA GETS ITS THIRD AIRCRAFT CARRIER

Why in news?

➲ Recently, China launched its biggest and most modern aircraft carrier.

➲ The new carrier, named Fujian, is the first catapult aircraft carrier wholly designed and built by China.

Why it matters?

➲ The announcement comes at a time of heightened tensions between China and the United States over China's sabre-rattling towards Taiwan, which it views as a breakaway province to be seized by force if necessary.

➲ China's carrier development programme is part of a massive overhaul of the People's Liberation Army under President Xi Jinping, who has vowed to build a "fully modern" force to rival the U.S. military by 2027.

Key features:

➲ It has significantly more advanced technology than China's two other carriers, including electromagnetic catapults to launch aircraft off its deck. The other carriers use a ski-jump-style ramp for takeoffs.

➲ And with a displacement of more than 80,000 tonnes,

it is comparable in size to the supercarriers of the United States Navy.

- The conventional flight deck with (electromagnetic catapults) will at least in theory allow the carrier to launch aircraft faster and with heavier payloads which constitute key deciding factors during battle.

What's next?

- It will take years before the Fujian becomes operational.

SRI LANKAN CABINET PASSES 21ST AMENDMENT

Why in news?

- Recently, the Sri Lankan Cabinet passed the 21st Amendment to its Constitution aimed at empowering the country's Parliament over the Executive President and now it will be tabled in Parliament.
- The 21st Amendment is expected to annul the 20A to the Constitution, which gives unfettered powers to President Gotabaya Rajapaksa after abolishing the 19th Amendment that will strengthen Parliament.

Introduction of 21A:

- The 21A aims, among other reforms, at barring dual citizens from contesting elections to hold public office.
- A section of the ruling was opposed to bringing in 21A without addressing the current economic crisis.
- Under the 21A, the President will be held accountable to the Parliament.
- The Cabinet of Ministers is also accountable to Parliament. The National Council is also accountable to Parliament. Fifteen Committees and Oversight Committees are accountable to Parliament.

What will the 21st Amendment entail?

- The amendment is likely to reduce the Presidency to a ceremonial position, retaining the powers of the President on all three armed forces while handing over almost all other key powers pertaining to governance, and cabinet ministers to the Prime Minister.
- Additionally, the President would require to act on the Prime Minister's advice to determine the scope and functions of ministries and appoint ministers, deputy ministers and state ministers.

Which amendments preceded the 21st Amendment?

19th Amendment in 2015:

- The enactment of the 19th Amendment in April 2015 was rushed by then Prime Minister Ranil Wickremesinghe. It had removed the powers of the President to sack the Prime Minister at his discretion.
- Articles 46 (2) and 48 of the Sri Lankan constitution were amended ensuring that the cabinet ministers could have been dismissed only if the Prime Minister ceased to hold office by death, resignation or otherwise, or only if the Parliament rejects a statement of government policy or the budget or if the parliament passes a vote of no confidence against the Government.
- The amendment also restricted the President's powers to dismiss Cabinet ministers as he was required to act on the advice of the Prime Minister.

Scrapping of 19th Amendment:

- This was overturned in 2019, when the Rajapaksa family came into power with Gotabaya Rajapaksa winning the presidential election and his brother Mahinda Rajapaksa occupying the prime minister's office. The 19th amendment was scrapped.
- After registering a landslide victory in the 2020 general elections, the Rajapaksas increased the executive powers of a President by bringing in the 20th Amendment.
- The amendment also empowered the President to make key appointments to independent institutions. It was after the passage of this amendment that close family members of the Rajapaksa brothers were installed in key positions.

Economic crisis in Sri Lanka:

- Sri Lanka has been grappling with unprecedented economic turmoil since its independence from Britain in 1948.
- Sri Lanka's economic crisis has created political unrest with protesters demanding the President's resignation.

INTERPOL'S RED CORNER NOTICE

Why in news?

- Recently, Interpol, issued a Red Corner Notice against Satinderjeet Singh alias Goldy Brar, a gangster living in Canada. He has claimed responsibility for the murder of Punjabi singer Sidhu Moosewala in Punjab's Mansa district.
- The request for notice was made by the Punjab Police and forwarded by the Central Bureau of Investigation (CBI).

What is a Red Corner Notice?

- It is an international document against wanted persons, requesting law enforcement agencies around

the world to locate and temporarily detain a suspect until their extradition, surrender, or other legal action.
- It is not an international arrest warrant.

What is Interpol?
- Interpol, or International Criminal Police Organisation, is an inter-governmental body with 194 member countries.
- It is headquartered in Lyon, France, and has offices in several countries around the world. Founded in 1923, it facilitates global police cooperation to fight international crime.

What does a Red Corner Notice contain?
- There are primarily two types of information in a Red Corner Notice:
- Information to identify the wanted person, such as their name, date of birth, nationality, photographs, etc.
- Information about the crime that they are wanted for. These crimes typically include murder, rape, child abuse or armed robbery.

What steps are taken before issuing a Red Corner Notice?
- A specialised task force reviews every Red Corner Notice request to ensure its compliance with the Interpol's rules. The team considers the information available at the time of publication.
- In case new and relevant information is brought to the notice of the General Secretariat, the task force re-examines the case.

What is the significance of a Red Corner Notice?
- Red Corner Notices help in alerting police worldwide about international wanted fugitives. They can thus help expedite extradition process and support the justice system.
- Notably, the subjects of a Red Corner Notice are wanted by a member country or an international tribunal, not the Interpol.
- Each member country is free to decide the degree of legal value it wants to give to the Red Notice.

What are some other Interpol notices?
Interpol issues eight different types of international notices, most of them colour-coded. They include the Red Notice, Green Notice, Yellow Notice, Orange Notice, Blue Notice, Purple Notice, Black Notice, and an INTERPOL–United Nations Security Council Special Notice.
a) Red Notice: It is issued to seek the location and arrest of wanted persons for prosecution or sentencing.
b) Yellow Notice: To help locate missing persons or to help identify persons who are unable to identify themselves.
c) Blue Notice: To collect additional information about a person's identity, location, or activities in connection with a crime.
d) Black Notice: To seek information on unidentified bodies.

e) Green Notice: To issue warning about a person's criminal activities, in case the person is considered a possible threat to public safety.
f) Orange Notice: To warn about an event, a person, an object, or a process that poses a serious and imminent threat to public safety.
g) Purple Notice: To collect or provide information on modus operandi, objects, devices, and concealment methods used by criminals.
h) INTERPOL–United Nations Security Council Special Notice: Issued for groups and individuals who are the targets of the UN Security Council Sanctions Committees. These notices are made public.

EUROPEAN UNION MAKES UKRAINE A CANDIDATE FOR EU MEMBERSHIP

Why in news?
- Recently, the European Union have agreed to make Ukraine a candidate for EU membership.
- The EU also gave candidate status to the tiny country of Moldova, another former Soviet republic that borders Ukraine.

Details:
- Meeting at a summit in Brussels, leaders of the EU's 27 nations mustered the required unanimous approval to grant Ukraine candidate status.
- That sets in motion a membership process that could take years or even decades.

Conditions for EU membership:
- To gain EU membership, countries must meet a detailed host of economic and political conditions, including a commitment to the rule of law and other democratic principles.
- Ukraine will have to curb entrenched government corruption and adopt other reforms.

What is the immediate result of this move by the EU?
- The EU nations have been united in backing Ukraine in its fight against Russia's invasion with money and weapons, adopting unprecedented economic sanctions against the Kremlin.
- EU candidate status doesn't give an automatic right to join the bloc and doesn't provide any immediate security guarantees.

➲ Once a country gains membership, however, it is covered under an EU treaty clause that says if a member falls victim to armed aggression, the other EU countries are obligated to assist it by all the means in their power.

➲ The main benefits of EU membership, though, are economic, since it gives access to a market of 450 million consumers with free movement of labor, goods, services and capital.

Ukraine's wish to join NATO:

➲ Ukraine has long aspired to join NATO, too, but the military alliance is not about to offer an invitation, in part because of governmental corruption, shortcomings in the country's defense establishment, and its contested borders.

➲ Before the war, Russian President Vladimir Putin demanded that Ukraine never be allowed to join NATO, which he has condemned for its eastward spread toward Russia's flank.

➲ But now, he did not seem bothered by Ukraine's determination to get closer to the EU, saying it is not a military pact and thus "we have no objections."

The membership process can be long and tortuous:

➲ Turkey, for example, applied for membership in 1987, received candidate status in 1999, and had to wait until 2005 to start talks for actual entry.

➲ Only one of more than 30 negotiating "chapters" has been completed in the years since, and the whole process is at a standstill as a result of various disputes between the EU and Turkey.

➲ Similarly, several Balkan countries have been seeking without success for many years to join the EU.

What's next?

➲ Ukraine has already adopted about 70% of the EU rules and standards, but they also have pointed to corruption and the need for deep political and economic reforms in the country.

G7'S $600-BN INFRA PROJECT

G7 AIMS TO RAISE $600 BILLION

Why in news?

➲ The G7 group announced an attempt to compete with China's formidable Belt and Road Initiative by raising $600 billion for global infrastructure programmes in poor countries.

➲ Partnership for Global Infrastructure and Investment:

➲ The Partnership for Global Infrastructure and Investment, unveiled by U.S. President and G7 allies from Canada, Germany, Italy, Japan and the European Union, aims to fill a huge gap left as communist China uses its economic clout to stretch diplomatic tentacles into the furthest reaches of the world.

➲ The target was for the U.S. to bring $200 billion to the table, with the rest of the G7 another $400 billion by 2027.

Private firms in key role:

➲ Unlike China's BRI initiative, the proposed G7 funding would depend largely on private companies being willing to commit to massive investments and is therefore not guaranteed.

Group of 7:

➲ The G7 is an informal forum of leading industrialised nations, which include Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

➲ Representatives of the European Union are always present at the annual meeting of the heads of state and government of the G7.

G7 2022 Summit:

➲ Germany holds the presidency of the G7 in 2022.

➲ Germany invited India, along with Argentina, Indonesia, Senegal, and South Africa to the 2022 Summit as partner countries.

➲ Ukrainian President Volodymyr Zelenskyy, will take part virtually.

ECONOMY

READING GDP GROWTH DATA

Why in news?

➲ India's Gross Domestic Product (GDP) grew 8.7% in 2021-22 according to the 'provisional estimates' released by the Ministry of Statistics and Programme Implementation.

Estimates on GDP:

➲ The GDP measures the value of all final goods and services, those that are bought by the final user-produced in a country in a given period (say a quarter or a year).

➲ India's gross domestic product (GDP) growth slowed to a four-quarter low of 4.1% during the January-March period, from 5.4% in the preceding quarter, as manufacturing output shrank.

➲ As a result, full-year growth came in at 8.7%, lower than the 8.9% pace projected in February.

➲ The latest national income estimates 'establish full economic recovery' as real GDP in 2021-22 exceeded the pre-pandemic levels of 2019-20.

➲ On a quarter-to-quarter basis, it argued real GDP growth was 6.7% in the fourth quarter (Q4) of 2021-22, reflecting a 'sustained growth momentum' entering the current fiscal year.

Gross Value-Added (GVA):

➲ Gross Value-Added (GVA) in the economy is estimated to have grown 8.1% in 2021-22, slightly lower than the 8.3% projected by the National Statistical Office (NSO) earlier.

➲ The GDP had shrunk 6.6% in 2020-21, while the GVA had contracted 4.8% in the wake of the COVID-19 lockdowns.

➲ The contact-dependent and employment-intensive trade, hotels, transport, communication & services related to broadcasting sector continued to languish below pre-pandemic levels, ending FY22 still 11.3% lower than 2019-20 GVA levels.

➲ Overall GVA growth slowed to 3.9% in the January-March 2022 quarter, from 4.7% in the preceding period. Worryingly, manufacturing sector output shrank 0.2% from a year earlier.

How are GDP and GVA different?

➲ While the GDP calculates national income by adding up all expenditures in the economy, the GVA calculates the national income from the supply side by looking at the value added in each sector of the economy.

➲ The two measures of national income are linked as follows: GDP-GVA+Taxes earned by the government -Subsidies provided by the government

➲ As such, if the government earned more from taxes than it spent on subsidies, GDP will be higher than GVA. If, on the other hand, if the government provided subsidies in excess of its tax revenues, the absolute level of GVA would be higher than that of GDP.

➲ GDP provides the demand side of the economy, and GVA the supply side.

Way Forward:

➲ Going forward, interest rate hikes would start impacting real GDP towards the end of this fiscal year, but growth could get a leg-up from 'a strong bounce-back in contact-based services'.

➲ India has paid its growth dues in the previous decade by fixing balance sheets in the corporate and financial sector. The non-food credit growth is beginning to creep into double digits, and it is expected that after a decade of stagnation, bank credit to GDP ratio should start looking up in the decade to come.

INDIA'S TEXTILES EXPORTS HIGHEST EVER IN FY 2021-22

Why in news?

➲ India recorded its highest-ever textiles and apparel exports in the financial year 2021-22 at USD 44.4 billion.

➲ The exports tally, which also includes handicrafts, indicates a substantial increase of 41 per cent and 26 per cent over corresponding figures in FY21 and FY20, respectively.

Top export destinations:

➲ USA was the top export destination accounting for 27% share, followed by EU (18%), Bangladesh (12%) and UAE (6%).

Product categories:

➲ In terms of product categories, the export of cotton Textiles was US$ 17.2 Bn with 39% share registering a growth of 54% and 67% during 2021-22 over FY 2020-21 and FY 2019-20, respectively.

➲ Export of Ready-Made Garments was US$ 16 Bn with 36% share showing a growth of 31% and 3% during 2021-22 over FY 2020-21 and FY 2019-20, respectively.

➲ Man-made textiles export was US$ 6.3 Bn with 14% share which shows a growth of 51% and 18% during 2021-22 over FY 2020-21 and FY 2019-20, respectively.

➲ Export of Handicrafts was US$ 2.1 Bn with 5% share reporting a growth of 22% and 16% during 2021-22 over FY 2020-21 and FY 2019-20 respectively.

CAIRN TO POWER MANGALA PIPELINE VIA SOLAR PANELS

Why in news?

➲ Cairn Oil & Gas, a unit of mining giant Vedanta Ltd., will convert a pipeline that ships crude oil from its Rajasthan oilfields to Gujarat to solar power by 2025.

Key Highlights:

➲ Cairn will convert the power source for the Mangala pipeline to solar from coal-fired grid power.

➲ It will install solar rooftop PVs in all the 36 Above Ground Installations (AGIs) along the pipeline by 2025.

Mangala pipeline:

➲ This pipeline is the world's longest, continuously heated and insulated pipeline that runs from oilfields of Rajasthan to refineries in Gujarat, traversing 705 km.

Way Forward:

➲ In line with its commitment to reduce carbon footprint, Cairn is cutting dependence on more

polluting sources of power and setting an important precedent in the industry.

⮞ The goal is to make world's longest, continuously heated and insulated hydrocarbon-carrying pipeline a greener and more efficient resource.

POSOCO SIGNS MOU WITH IMD FOR BETTER ELECTRICITY GRID MANAGEMENT

Why in news?

⮞ National grid operator POSOCO signed a memorandum of understanding with India Meteorological Department (IMD).

⮞ Under it, both the parties agreed that weather information provided by IMD will be used by the Power System Operators across the India for better management of Indian Power System and for the purpose of analysis.

Data to be provided by IMD:

⮞ IMD will make available current weather information every hour or at lesser intervals.

⮞ It will provide weather forecasts of temperature, humidity, wind speed, wind direction, rainfall up to next 36 hours for the identified stations.

⮞ It will also provide the snowfall forecast of hilly States and also along the route of important transmission lines passing through hilly terrains.

⮞ It will provide weather parameters forecast at Renewable Energy plant locations.

About POSOCO:

⮞ Power System Operation Corporation is a wholly owned Government of India Schedule A enterprise under the Union Ministry of Power.

⮞ It is responsible to ensure the integrated operation of the National Electricity Grid in a secure manner.

⮞ It consists of five Regional Load Despatch Centres (RLDCs) and the National Load Despatch Centre (NLDC) under The Electricity Act, 2003.

4TH STATE FOOD SAFETY INDEX

Why in news?

⮞ In an effort to galvanize States/UTs to work towards ensuring safe food for citizens, Union Minister for Health and Family Welfare released Food Safety and Standards Authority of India (FSSAI)'s 4th State Food Safety Index (SFSI).
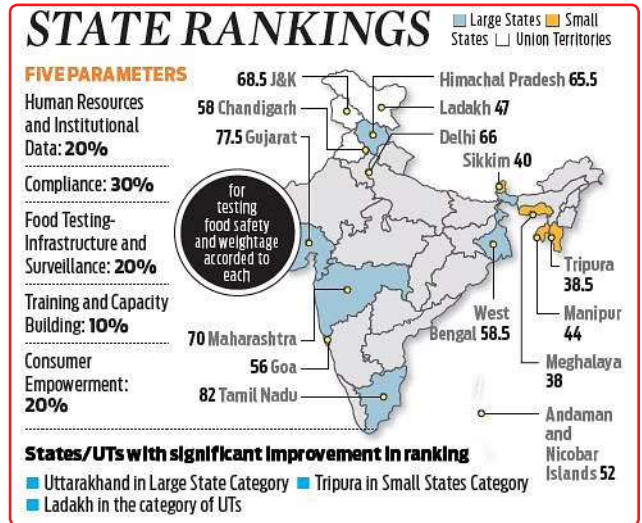
What is State Food Safety Index (SFSI)?

⮞ The State Food Safety Index (SFSI) measures the performance of States on the basis of five parameters prescribed by the Health Ministry.

⮞ The rating is done by the Food Safety and Standards Authority of India (FSSAI).

⮞ SFSI was started from 2018-19 with the aim of creating a competitive and positive change in the food safety ecosystem in the country.

⮞ The index will help in providing safe and nutritious food to our citizens.

Winners:

⮞ The Union Health Minister felicitated the winning State/UTs based on the ranking for the year 2021-22 for their impressive performance across parameters.

⮞ Among the larger states, Tamil Nadu was the top ranking state, followed by Gujarat and Maharashtra. Among the smaller states, Goa stood first followed by Manipur and Sikkim.

⮞ Among UTs, Jammu & Kashmir, Delhi and Chandigarh secured first, second and third ranks.

EatSmart Cities Challenge:

⮞ To motivate Smart Cities to develop and execute a plan that supports a healthy, safe and sustainable food environment through adoption of various Eat Right India initiatives, he also felicitated 11 winning smart cities of the EatSmart Cities Challenge, launched by FSSAI in 2021 in association with the Smart Cities Mission under the aegis of Ministry of Housing and Urban Affairs (MoHUA).

⮞ He also felicitated winners of the Eat Right Research Challenge for Cities and Districts and Eat Right Research Awards and Grants.

AyurvedaAahar:

⮞ He further launched various innovative initiatives by FSSAI including the Eat Right Research Awards and Grants – Phase II.

⊃ Eat Right Creativity Challenge – Phase III, a competition at the school level and logo for AyurvedaAahar which contains the initials of Ayurveda and Ahara with 5 leaves symbolising five elements of nature. This logo would be beneficial in creating a unique identity, easy identification and proven benefits to improve health and wellbeing.

WORLD BANK CUTS INDIA'S ECONOMIC GROWTH FORECAST TO 7.5% FOR FY23

Why in news?

⊃ The World Bank recently, cut India's economic growth forecast for the current fiscal to 7.5%.

⊃ India's economic growth forecast has been reduced due to rising inflation, supply chain disruptions and geopolitical tensions taper recovery.

Background:

⊃ This is the second time that the World Bank has revised its GDP growth forecast for India in the current fiscal 2022-23 (April 2022 to March 2023). In April, it had trimmed the forecast from 8.7% to 8% and now it is projected at 7.5%.
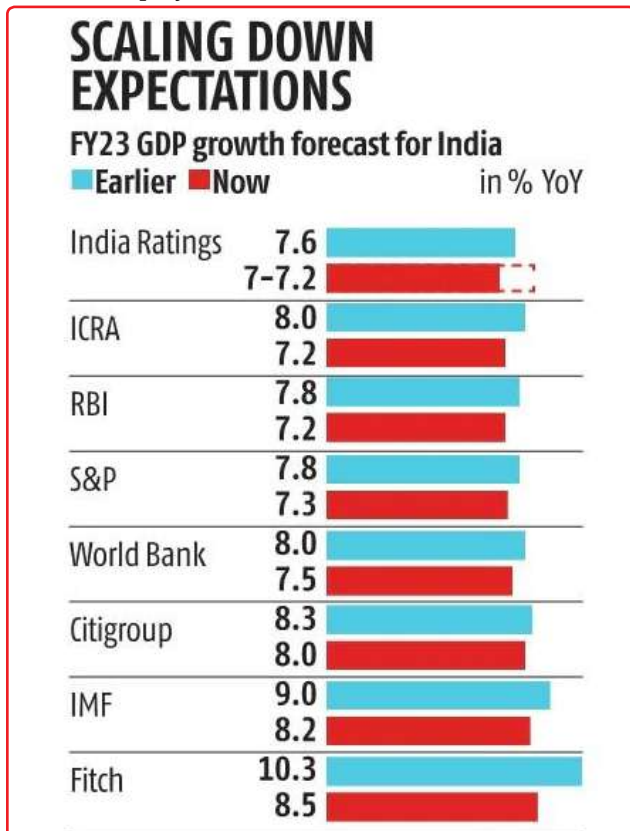
⊃ The GDP growth compares to an 8.7% expansion in the previous 2021-22 fiscal.

⊃ A rise in prices across all items from fuel to vegetables and cooking oil pushed WPI or wholesale price-based inflation to a record high of 15.08 per cent in April and retail inflation to a near eight-year high of 7.79%.

⊃ High inflation prompted the Reserve Bank to hold an unscheduled meeting to raise the benchmark interest rate by 40 basis points to 4.40%.

Response of various global rating agencies:

⊃ Prior to the World Bank's action, global rating agencies too had slashed India's economic growth forecast.

⊃ Earlier, Moody's Investors Service trimmed the GDP projection to 8.8% for the calendar year 2022 from 9.1% earlier, citing high inflation.

⊃ S&P Global Ratings too had cut India's growth projection for 2022-23 to 7.3%, from 7.8% earlier, on rising inflation and longer-than-expected Russia-Ukraine conflict.

⊃ In March, Fitch had cut India's growth forecast to 8.5%, from 10.3%, while IMF has lowered the projection to 8.2% from 9%

⊃ Asian Development Bank (ADB) has pegged India's growth at 7.5%, while RBI in April cut the forecast to 7.2% from 7.8% amid volatile crude oil prices and supply chain disruptions due to the ongoing Russia-Ukraine war.

Key Highlights:

⊃ According to the World Bank report, growth in India slowed in the first half of 2022 as activity was disrupted both by a surge in COVID-19 cases, accompanied by more-targeted mobility restrictions and by the war in Ukraine. The recovery is facing headwinds from rising inflation.

⊃ The unemployment rate has declined to levels seen prior to the pandemic, but the labour force participation rate remains below pre-pandemic levels and workers have shifted to lower-paying jobs.

⊃ In India, the focus of government spending has shifted toward infrastructure investment, labour regulations are being simplified, underperforming state-owned assets are being privatised, and the logistics sector is expected to be modernized and integrated.

Global Growth:

⊃ World Bank said after multiple crises, long-term prosperity will depend on returning to faster growth and a more stable, rules-based policy environment.

⊃ There is good reason to expect that, once the war in Ukraine stops, efforts will redouble to rebuild the Ukrainian economy and revive global growth.

⊃ Global growth is expected to slow sharply from 5.7% in 2021 to 2.9% in 2022. This also reflects a nearly one-third cut to our January 2022 forecast for this year of 4.1 per cent.

Conclusion:

⊃ The surge in energy and food prices, along with the supply and trade disruptions triggered by the war in Ukraine and the necessary interest-rate normalization now underway, account for most of the downgrade.

INDIA SEEKS PERMANENT SOLUTION ON FISHERIES SUBSIDIES, PUBLIC STOCKHOLDINGS AHEAD OF WTO MEET

Why in news?

- India seeks a permanent solution on the issues of fisheries subsidies and public stockholdings (PSH) at the 12th Ministerial Conference (MC) of the World Trade Organization (WTO), which is soon to begin June in Geneva.
- The current negotiations tabled at MC12 do not favour developing countries.

Public stockholdings (PSH):

- India aiming for a permanent solution on PSH that will protect the interests of India's farmers and agricultural products. Many developing countries expect an outcome for a Minimum Support Price (MSP) kind of policy that will safeguard them and benefit global trade.
- PSH should be taken positively as vulnerable countries will be supported through such exports in times of dire need.
- The WTO currently considers PSH subsidies, including those given for MSP programmes for crops, as distortions to trade and subject to a cap of 10 per cent of the value of production.

Food security:

- The COVID-19 pandemic and the Ukraine-Russia war have escalated food and fertiliser prices. The inflation in these countries and recurring hike in food prices demand a long-term solution for developing countries, which is currently absent in the WTO's agenda tabled for the subject.
- The WTO's solutions offered short-term fixes. The developing countries would struggle if the PSH went against them and they had to repeatedly buy goods from galloping food markets, putting stress on their economies.

Expected outcome:

- Instead of being seen as a threat to the global market, PSH should be focused on changing trade rules that will enable long-term resilience and coping mechanisms for developing countries.
- The amendment in rules will help developing countries build self-sufficiency, protect their

populations from volatile agriculture markets and help other countries when needed.

Fisheries:

- The WTO failed to specify the responsibility to assess the origin of the problems of overfishing and illegal fishing.
- The negotiations also do not align with the Sustainable Development Goals of the United Nations. It will only make things harder for fisherfolk in underdeveloped countries as their rights and capabilities will be reduced.

Way Forward:

- A bad deal for developing countries would be equivalent to a no deal.
- MC12 will be held from June 12-15 at the WTO headquarters in Geneva after it was postponed in late 2021 due to the Omicron variant of the novel coronavirus.

CHINA TAKES OVER AS BIGGEST IMPORTER OF INDIAN BROKEN RICE

Why in news?

- In financial year 2021-22, China emerged as the top buyer of Indian broken rice.

In India's rice story, broken grains a promising basket

212.10 LMT India's total rice export in 2021-22

172.62 LMT non-basmati rice

39.48 LMT basmati rice

EXPORT OF BROKEN RICE FROM INDIA TO CHINA
(metric tonnes)

Nov 2020	4,290
Dec 2020	25,335
Jan 2021	42,950
Feb 2021	74,555
Mar 2021	1,26,427
Apr 2021	92,845.25
May 2021	71,327.5
Jun 2021	1,20,822.3
Jul 2021	1,62,049.15
Aug 2021	1,11,064.75
Sep 2021	78,946.2
Oct 2021	67,237.05
Nov 2021	57,221.6
Dec 2021	1,02,422.55
Jan 2022	1,92,393.8
Feb 2022	2,42,640.0
Mar 2022	2,77,799.85

WHAT IS BROKEN RICE?
If rice kernels are not sound, it is called broken rice. Generally, broken rice is classified into two sub-categories: big and small. As per Food Corporation of India specifications, "Pieces equal to or smaller than 3/4th, but bigger than one half of the average length of the unbroken kernels" are classified as big broken rice. The small broken rice is defined as "pieces that do not exceed 1/4 average length of unbroken kernel…"

NON-BASMATI VARIETY: TOTAL EXPORTS*

74.52 LMT Rice parboiled	6.55 LMT Other rice in husk
52.48 LMT Non-parboiled rice (excluding basmati)	0.28 LMT Rice in husk of seed quality
38.64 LMT Broken rice	0.14 LMT Husked (brown) rice

*category export in 2021-22

Key Highlights:

- China emerged as the top buyer of Indian rice during the pandemic, with the neighbouring country importing 16.34 lakh metric tonnes (LMT) or 7.7

per cent of India's total rice export of 212.10 LMT in financial year 2021-22.

➲ The analysis shows that out of China's total rice import from India of 16.34 LMT, nearly 97 per cent, or 15.76 LMT, was broken rice, which has seen a spike in demand from that country.

➲ In fact, China is now the top buyer of Indian broken rice, which was earlier exported mostly to African countries.

Reasons for increased demand by China:

➲ The reason for this increase in export of broken rice to China is the higher demand of rice for making noodles and wine in that country.

➲ China had sent a delegation to India before the outbreak of Covid-19 and that delegation visited several rice mills.

➲ Another reason for this increase in demand could be rising prices of corn. The demand for broken rice has seen a spike at a time when prices of food items have registered an increase globally in recent months, particularly after Russia's invasion of Ukraine.

MAIDEN SERVICE OF BHARAT GAURAV TRAIN

Why in news?

➲ Recently, the first service of the theme-based Bharat Gaurav Train from Coimbatore North to Sainagar Shirdi was started.

➲ With this, Southern Railway becomes the first zone in Indian Railways to get the first Registered service provider under the 'Bharat Gaurav" Scheme and commence the operations of the maiden service from Coimbatore North to Sainagar Shirdi.

Registered Service Provider:

➲ South Star Rail is the registered service provider that operates this Bharat Gaurav Train from Coimbatore to

Shirdi and back. This Coimbatore based company is registered company and it is part of the conglomerate group - Future Gaming & Hotel Services Pvt. Limited.

Bharat Gaurav Trains:

➲ Indian Railways had launched the operation of theme-based Bharat Gaurav train in the month of November 2021.

➲ The objective of this theme is to showcase India's rich cultural heritage and magnificent historical places to the people of India and the world, through Bharat Gaurav Trains.

➲ This scheme also aims to leverage the core strengths of the professionals of the tourism sector to run theme-based trains to tap the vast tourist potential of India.

Way Forward:

➲ At present, IRCTC is already running several tourist circuit trains in Railways.

➲ This Bharat Gaurav scheme will now help in roping in of more tour operators with professional experience and will give boost to tourism sector in the country.

DHAROHAR – NATIONAL MUSEUM OF CUSTOMS AND GST IN GOA

Why in news?

➲ Recently, Union Minister for Finance and Corporate Affairs dedicated to the nation, "Dharohar" - the National Museum of Customs and GST in Goa.

Unique aspects:

➲ The dedication ceremony was performed in a unique manner, with the Finance Minister removing the golden sand from single rock art installed at the centuries old heritage building in which the museum is housed.

➲ The two storey 'Blue building', which was earlier known as Alfandega, during the period of Portuguese rule in Goa, has been standing on the banks of the Mandovi River in Panaji for more than 400 years.

Key Features:

➲ Dharohar is one of its kind museums in the country that showcases not only the artefacts seized by Indian Customs but also depicts various aspects of work performed by the Customs Department while

safeguarding the economic frontiers of the country, its heritage, flora & fauna and the society.

- 'Dharohar' has 8 galleries viz: Introductory gallery, History of Taxation Gallery, Guardians of our economic frontiers gallery, Guardians of our Art & Heritage, Guardians of Flora & Fauna, Custodians of our social well being, Journey of Indirect taxes –Salt Tax to GST and the GST gallery.

- The tour de force of Dharohar museum is a unique 'Battle of Wits' gallery which showcases the cerebral battle between the smugglers and the Customs officers. It contains chronicled seizures of antique coins, statues, endangered wildlife, weapons and narcotics.

- Notable among its displays are the manuscript of Ain-i-Akbari intercepted by the Indian Customs at the Indo-Nepal border at Raxaul, replica of Amin pillars from Kaurkshetra, medieval period astronomical instruments, seized metal and stone artefacts, ivory items and wildlife items.

Background:

- Beginning with the Atal Behari Vajpayee Government initiating discussions on GST in 2000, the Gallery chronicles various stages and processes that paved the way for introduction of reformed unified indirect taxation in the form of GST on 1 July 2017.

PROJECT INFORMATION AND MANAGEMENT (PIM) MODULE BY COAL MINISTRY

Why in news?

- The Ministry of Coal has launched Project Information & Management Module of Single Window Clearance System (SWCS).

- The PIM module of SWCS will facilitate project proponents as well as ministry and state officials in monitoring and expeditious implementation of coal mines.

Mandate:

- The Project Information and Management (PIM) module of the Single Window Clearance System, is a platform to seek various clearances to operationalise coal mines.

- The development assumes significance in the wake of the government making efforts to secure domestic fuel supplies amid fear of shortage during monsoon.

Why it has been launched?

- Various statutory provisions like approval of mining plan and mine closure plan, and environment and forest clearances, are the prerequisites for starting a coal mine.

- These clearances are granted by various central ministries and state government departments. Some of the clearances have their online portals, but most are being given through offline mode.

- The project proponents are required to approach different administrative ministries and government departments separately to apply for the requisite clearances, leading to delay in operationalisation of coal mines.

- As part of the decision to digitise the clearances, the Ministry of Coal has conceptualised a single window clearance system, through which a project proponent can apply for requisite clearances with a single registration interface.

Ease of Doing Business:

- The portal is proposed to map applications and their respective process flows for grant of all the statutory clearances required for starting of a coal mine.

- To facilitate ease of doing business, a unified platform of SWCS is designed which includes already operational module for approval of mining plan and mine closure plan in a time bound manner and integration with Parivesh Portal, digital acceptance of objection under Section 8 (1) of Coal Bearing Areas (Acquisition & Development) Act, 1957, Consent Management System of Telangana & West Bengal.

UNEMPLOYMENT HAS DECREASED, SAYS LATEST LABOUR FORCE SURVEY

Looking for work | The labour force participation rate (LFPR) has continued to improve further in 2020-21, according to the latest Periodic Labour Force Survey. The graph shows LFPR over years across genders

	2017-18	2018-19	2019-20	2020-21
Male	55.5	55.6	56.8	57.5
Total	36.9	37.5	40.1	41.6
Female	17.5	18.6	22.8	25.1

Why in news?

- Recently, the Periodic Labour Force Survey (PLFS) for 2020-21 was released by the Ministry of Statistics and Programme Implementation.

Key Highlights:

- The unemployment rate saw a decrease of 0.6% and fell to 4.2% in 2020-21, compared with 4.8% in 2019-20.
- This means that only 4.2% of adults who looked for jobs could not get any work in rural and urban areas of the country in 2020-21.
- Rural areas recorded an unemployment rate of 3.3% and urban areas recorded an unemployment rate of 6.7%.

Rotational panel sampling design by NSO:

- The National Statistical Office (NSO) uses "rotational panel sampling design" in urban areas to assess the Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR) and the unemployment rate, and visits selected households in urban areas four times.

Labour Force Participation Rate (LFPR):

- The LFPR, the percentage of persons in the labour force (that is, working or seeking work or available for work) in the population was 41.6% during 2020-21. It was 40.1% in the previous year.

Worker Population Ratio (WPR):

- The WPR was 39.8%, an increase from 38.2% of the previous year. WPR is defined as the percentage of employed persons in the population.

Migration rate:

- Migrants are defined in the survey as a household member whose last usual place of residence, at any time in the past, was different from the present place of enumeration. The migration rate, according to the survey, is 28.9%.
- The migration rate among women was 48% and 47.8% in rural and urban areas, respectively.

Way Forward:

- Overall, the report suggests shifting the government's policy directions as it has become more rural centric.
- Creation of rural jobs other than in the agricultural sector and MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) could be priorities for the government at the Union and State levels.

PUNJAB PLANS CROP DIVERSIFICATION SCHEME
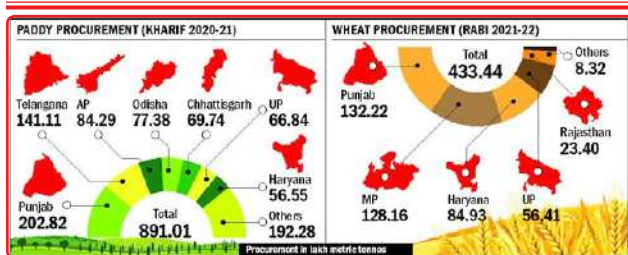
Why in news?

- To curb depletion in ground water levels and reduce power usage, the Punjab government is firming up a

plan on crop diversification.

Key Highlights:

- Under it, around a million hectare (MH) or a third of water-intensive paddy grown areas in the state would be gradually shifted to alternative crops such as cotton, maize, oilseeds and pulses, over the next five years.
- The state government will also provide incentives to farmers for shifting around 10% of wheat area to alternative crops such as oilseeds and pulses.
- The crop diversification would entail financial incentives to farmers, procurement of crops by state agencies under the Minimum Support Price (MSP) operations and processing facilities. Annually, around 0.1-0.2 MH paddy sown will be shifted to alternate crops.

Over-exploitation of ground water resources:

- The paddy cultivation has led to over-exploitation of ground water resources in the state, the Punjab Economic Survey (2020-21) had stated 'cultivation of rice would need the use of submersible pumps which are expensive, and unlikely to be suitable for marginal and small landholding farmers".
- The crop diversification in Punjab has been virtually a non-starter as because of the open-ended rice and wheat procurement system followed by Food Corporation of India (FCI) and state agencies, farmers are reluctant to adopt less water intensive crops because of lack of procurement or marketing avenues.

Contribution of Punjab in central pool:

- In the current procurement season (October-September) for 2021-22, Punjab has contributed more than 12.5 million tonne (MT) or 20% of total rice procurement of 56.81 MT to the central pool managed by FCI.
- In the ongoing rabi procurement drive for wheat (2022-23), Punjab has contributed more than 51% of the 18.77 MT of wheat purchased from farmers so far.

Initiatives by Punjab government:

- The Punjab government, from the current kharif season (2022-23), is promoting direct seeding of rice (DSR) which consumes less water, improves percolation and reduces dependence on farm labour.
- The state government is also encouraging farmers to take up short duration varieties of rice (which matures in 125 days instead of conventional varieties that take 135-145 days) such as PAU 126, 127 and 128 so that transplantation could be done using monsoon rains in July.

Sub-scheme of Rashtriya Krishi Vikas Yojana:

- According to a statement by agriculture ministry in Parliament in April, crop diversification programme initiated in 2013-14 as a sub-scheme under the Rashtriya Krishi Vikas Yojana in the Green revolution states such as Punjab, Haryana and western Uttar

Pradesh, has brought only 0.63 MH under the demonstration of alternative crop at farmers' field.

ICICI, HDFC, NPCI'S ARE 'CRITICAL INFORMATION INFRASTRUCTURE'
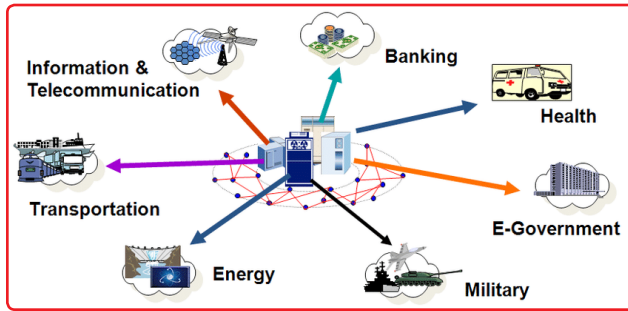
Why in news?

➲ Recently, Ministry of Electronics and IT (MeitY), has declared the IT resources of ICICI Bank, HDFC Bank and UPI managing entity NPCI as 'critical information infrastructure'.

➲ It means that implying any harm to them can have an impact on national security and any unauthorised person accessing these resources may be jailed for up to 10 years.

IT resources of ICICI Bank:

➲ The Ministry of Electronics and IT (MeitY), declared the IT resources of ICICI Bank as critical infrastructure under Section 70 of the IT Act, 2000.

➲ The central government hereby declares the computer resources relating to the Core Banking Solution, Real Time Gross Settlement and National Electronic Fund Transfer comprising Structured Financial Messaging Server, being critical information infrastructure of the ICICI Bank, and the computer resources of its associated dependencies to be protected systems for the purpose of the said Act.

IT resources of HDFC bank & NPCI:

➲ In a similar worded two other notifications, Meity declared IT resources of HDFC bank and UPI managing entity National Payments Corporation of India (NPCI) as critical infrastructure.

➲ The notification authorises access of IT resources of the notified entities by their designated employees, authorised team members of contractual managed service providers or third-party vendors who have been authorised by them for need-based access and any consultant, regulator, government official, auditor and stakeholder authorised by the entities on case-to-case basis.

What is 'critical information infrastructure'?

➲ As per the Act, 'critical information infrastructure' means a computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety.

➲ Any person who secures access or attempts to secure access to a protected system in contravention of the provisions shall be punished with imprisonment of a term which may extend to 10 years and shall also be liable for a fine.

Way Forward:

➲ Looking at the recent sophisticated cyber-attacks, it is high time all the banks and financial institutions get themselves notified as a protected system.

PM NATIONAL DIALYSIS PROGRAMNE (PM-NDP)
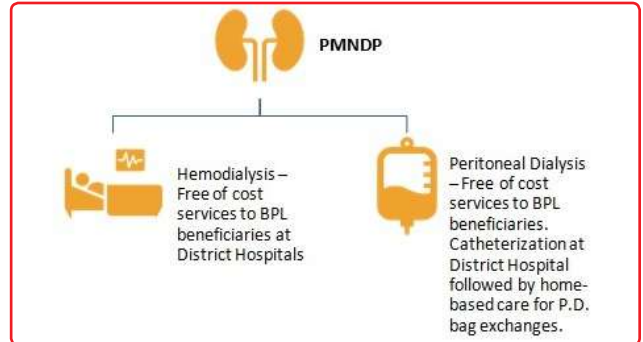
Why in news?

➲ Recently, the Union Health Ministry directed States and Union Territories to focus towards expanding coverage of the Pradhan Mantri National Dialysis Programme (PM-NDP) to all districts in all states and UTs.

➲ To expand the coverage of Pradhan Mantri National Dialysis Programme (PMNDP) across the country, States were asked to cover all districts by Haemodialysis programme and also promote Peritoneal dialysis programme alongside as it is less restrictive for the patients and requires less technical demand from institutions.

Key Guidelines:

➲ It focused on expanding 100 per cent coverage of the National Dialysis Programme.

➲ The States were also advised extensive use of the PMNDP portal, an API-based IT platform for capturing details of all beneficiaries availing of free dialysis services under PMNDP.

➲ To prevent duplication and ensure transparency, efficiency and inter-operability, States were asked to ID ensure registration using a 14-digit unique ABHA ID.

➲ They were also requested to share APIs and integrate it with the PMNDP portal if using separate portals, for holistic coverage.

AMRIT SAROVAR MISSION COULD BOOST INFRASTRUCTURE PROJECTS

Why in news?

➲ In a move that could expedite the implementation of railways and highways projects across the country,

the Union government has asked the Ministry of Railways and the National Highways Authority of India (NHAI) to use the soil/silt excavated from ponds/tanks in all districts across the country under the Amrit Sarovar mission for their infrastructure projects.

Amrit Sarovar Mission:

➲ The water conservation mission launched by Prime Minister Narendra Modi on April 24, 2022, aims at developing and rejuvenating 75 water bodies in each district in all States as part of the celebrations of 'Azadi ka Amrit Mahotsav'.

➲ At least 50,000 water bodies are expected to be rejuvenated across the country during the nationwide programme that would culminate on August 15, 2023.

➲ The Centre announced that the national flag would be hoisted at all the Amrit Sarovar sites on that day.

PRIME MINISTER NARENDRA MODI LAUNCHES AMRIT SAROVAR - AN INITIATIVE AIMED AT DEVELOPING AND REJUVENATING 75 WATER BODIES IN EACH DISTRICT OF THE COUNTRY

All these 75 sarovars will come up in every district by 15 August in 2023. These sarovars should be lined with trees named after the martyrs and freedom fighters: PM Narendra Modi

Boost to infrastructure projects:

➲ Since the project would involve excavation of several thousands of tonnes of earth in the form of soil or silt, the Ministry of Rural Development has told the Ministry of Railways and the NHAI to map its infrastructure projects with the Amrit Sarovar sites in all States and Union Territories.

➲ The authorities were told to use the soil and silt excavated from the sites for the construction of ongoing projects.

Nodal officers:

➲ General Managers of all Zonal Railways were told to nominate the Chief Administrative Officer (Construction) as the nodal officer who would identify the nearest sites of Amrit Sarovar to ongoing railway projects, study the suitability of the desilted soil and silt and submit a feasibility report at the earliest.

➲ Many railway projects were held up due to the delay in getting the required quantity of burrow earth from the local authorities. Though the issue was flagged at the appropriate level, the timely availability of earth remained a challenge.

Road projects:

➲ The Amrit Sarovar mission will cater to the requirements of projects being implemented by the NHAI.

➲ In Tamil Nadu, the issue of allowing contractors to lift burrow earth became so intense that in February 2022, the NHAI threatened to cancel the road widening work of East Coast Road between Mamallapuram and Puducherry. However, the issue was resolved after the State government assured to resolve the issue.

➲ The soil and silt excavated from the 75 waterbodies from each district of Tamil Nadu might be made available to road contractors for implementing road projects.

INDIA RANKS FOURTH IN GLOBAL GOLD RECYCLING: WGC

Why in news?

➲ Recently, the World Gold Council (WGC) report titled 'Gold refining and recycling' was released.

Key findings:

➲ China topped the global gold recycling chart as it recycled 168 tonnes of the yellow metal, followed by Italy in the second position with 80 tonnes and the US in the third rank with 78 tonnes in 2021.

➲ India was ranked fourth in the list as the country recycled 75 tonnes in 2021.

Observations on India:

➲ From 300 tonnes in 2013, India's gold refining capacity increased by 1,500 tonnes (500%) in 2021.

➲ The gold refining landscape in the country has changed over the last decade, with the number of formal operations increasing from less than five in 2013 to 33 in 2021.

➲ While the informal sector accounts for as much as an additional 300-500 tonnes, it is worth noting that the scale of unorganised refining has fallen, largely due to the government's tightening of pollution regulations.

➲ On the other hand, tax advantages have underpinned the growth of India's gold refining industry like the import duty differential on dore over refined bullion has spurred the growth of organised refining in India.

➲ As a result, gold dore's share of overall imports has risen from just 7% in 2013 to around 22% in 2021.

Potential of India:

➲ Despite being the fourth largest recycler in the world, India recycles little of its own stock of gold about 8% of the global scrap supply.

➲ Current gold price movements, future price expectations and the economic backdrop drive recycling.

➲ India has potential to emerge as a competitive refining hub if the next phase of bullion market reforms promotes responsible sourcing, exports of bars and consistent supply of dore or scrap.

Way Forward:

➲ The holding periods of jewellery will continue to decline as younger consumers look to change designs more frequently, a trend that could contribute to higher levels of recycling.

➲ On the other hand, higher incomes following stronger economic growth will reduce outright selling and consumers will find it easier to pledge their gold rather than sell it outright. It is, therefore, necessary to support organised recycling with better incentives and tech-based solutions encompassing the gold supply chain end-to-end.

STUDY FLAGS EMERGENCE OF DRUG-RESISTANT TYPHOID STRAINS

Why in news?

➲ Recently, a study was conducted by researchers from Stanford University, Christian Medical College Vellore and other institutions on drug –resistant typhoid strains.

➲ Typhoid fever causes 11 million infections and more than 100,000 deaths per year. South Asia accounts for 70% of the global disease burden.
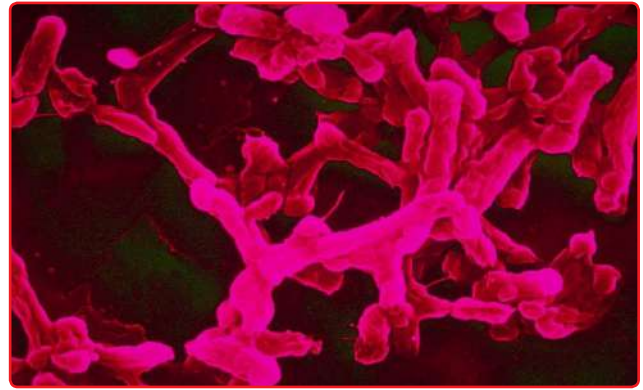
Key Findings:

➲ The effectiveness of antibiotics for typhoid fever is threatened by the emergence of resistant strains, according to a large genome sequencing study of the bacteria Salmonella Typhi.

➲ Since 2000, multi-drug-resistant (MDR) S Typhi has declined steadily in Bangladesh and India, remained low in Nepal, and increased slightly in Pakistan.

➲ However, these are being replaced by strains resistant to other antibiotics.

➲ The genome analysis also reveals that resistant strains, almost all originating in South Asia have spread to other countries 197 times since 1990.

➲ The study sequenced 3,489 S Typhi isolates from 2014-19 from people in Bangladesh, India, Nepal, and Pakistan, and 4,169 samples isolated from over 70 countries during 1905-2018.

When a strain is classified MDR?

➲ Strains were classified as MDR if they had genes giving resistance to antibiotics ampicillin, chloramphenicol, and trimethoprim/ sulfamethoxazole.

What's next?

➲ India's Health Ministry is considering introducing new typhoid conjugate vaccines into the national immunisation program. Two WHO-prequalified vaccines have been developed in India (by Bharat Biotech and Biological E).

➲ Surveillance at 18 Indian sites during 2016-20 found typhoid was as common as it was two decades ago, especially in urban areas.

PANEL PITCHES NIXING OF GST EXEMPTIONS ON HOST OF ITEMS

Why in news?

➲ A review of a series of exemptions and inverted duty structure as recommended by the Group of Ministers (GoM) on rate rationalisation are likely to be taken up for discussion in the upcoming Goods and Services Tax (GST) Council meeting.

Background:

➲ In its earlier meeting, the GoM, headed by Karnataka Chief Minister, had converged upon the preparation

of an interim report and seeking an extension of its tenure.

Suggestions in GoM report:

- The GoM, in its interim report to the GST Council, have suggested an increase in the GST rate on electronics-waste to be raised to 18 per cent from 5 per cent along with an increase in the rate on exploration activities of goods related to petroleum and coal bed methane from 5 per cent.
- A recommendation has been made to remove exemption on rent of hospital rooms with rent over Rs 5,000 as against complete exemption at present.
- Business class travel from airports in the north-eastern states could also end soon if the recommendation of the GoM gets accepted in the Council. This compares with a levy of 12 per cent GST on business travel by air in the rest of the country.
- The panel has also looked at the possibility of withdrawing exemption on services provided by Food Safety and Standards Authority of India (FSSAI) to food business operators as against 18 per cent levy on services at present.
- The panel is also likely to have suggested a review of the unbranded food items, which at present do not attract GST.

About GST Council:

- The GST Council governs the Goods and Services Tax (GST). Article 279 (1) of the amended Indian Constitution states that the GST Council has to be constituted by the President within 60 days of the commencement of the Article 279A.

Functions:

- The GST council is the key decision-making body that will take all important decisions regarding the GST.
- The GST Council dictates tax rate, tax exemption, the due date of forms, tax laws, and tax deadlines, keeping in mind special rates and provisions for some states.
- The predominant responsibility of the GST Council is to ensure to have one uniform tax rate for goods and services across the nation.

HYDERABAD LAC BANGLES SET TO GET GI TAG

Why in news?

- Recently, Hyderabad-based Creasent Handicraft Artisans Welfare Association has filed an application for securing a Geographical Indications tag for lac bangles that are manufactured in the city.
- The Geographical Indications Registry, Chennai has accepted the application.

Characteristics:

- The lac bangles can be seen in the shops that line the Laad Bazaar area near Charminar shimmering with mirror work and encrusted precious stones.

- They are handcrafted in the homes by an army of workers who use molten lac and shape them into bangles and turn them into speckled shimmering wonders.

Products with GI in Telangana:

- Hyderabad Haleem, Warangal Durries, Nirmal Toys and Karimnagar filigree, Pochampally Ikat are some of the other products that have secured the GI in Telangana state.

What is GI tag?

- A GI is primarily an agricultural, natural or a manufactured product (handicrafts and industrial goods) originating from a definite geographical territory.
- Typically, such a name conveys an assurance of quality and distinctiveness, which is essentially attributable to the place of its origin.
- In India, Geographical Indications registration is administered by the Geographical Indications of Goods (Registration and Protection) Act, 1999 which came into force with effect from September 2003.
- The first product in India to be accorded with GI tag was Darjeeling tea in the year 2004-05.

IMAI ANNOUNCES COMMITTEE TO STUDY ISSUES FACED BY VC FIRMS IN INDIA

Why in news?

- The Internet and Mobile Association of India (IAMAI) announced setting up a committee to hold public policy consultations for building an industry network of venture capital (VC) firms.

Stakeholders:

➲ Vikas Agnihotri, operating partner at SoftBank Investment Advisers, will chair the committee and Shweta Rajpal Kohli, chief public policy officer, Sequoia India & Southeast Asia, will be the co-chair.

➲ Sequoia India, SoftBank, Multiples Alternate Asset Management, Indian Angel Network, 3one4 Capital, Eximius and other domestic and international venture funds are on the committee, which has nearly half its members from the Indian VC community.

Mandate:

➲ The committee will work for direct foreign listing of Indian start-ups, clarification on Gift tax, taxation on ESOPs, angel fund structure, GIFT City regulations etc.

➲ The increasing support of venture capital firms to Indian start-ups makes it imperative to highlight the collective issues faced by these firms at appropriate forums.

Way Forward:

➲ The formation of this committee is a crucial step towards furthering the government's vision of turning India into an attractive investment destination for VC & PE firms and building a world-class start-up ecosystem.

WORLD BANK APPROVES $250 MN LOAN FOR ROAD SAFETY

Why in news?

➲ Recently, the World Bank has approved a $250 million loan to support the Government of India's road safety programme for seven States under which a single accident reporting number will be set up to better manage post-crash events.

➲ The $250 million variable spread loan from the International Bank for Reconstruction and Development (IBRD) has a maturity of 18 years including a grace period of 5.5 years.

States covered:

➲ The India State Support Program for Road Safety, financed by the World Bank, will be implemented in Andhra Pradesh, Gujarat, Odisha, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.

India State Support Program for Road Safety:

➲ The project will also establish a national harmonised crash database system in order to analyse accidents and use that to construct better and safer roads.

➲ It will also fund network expansion of basic and advanced life support ambulances and training of first responder caregivers to road crash victims on the spot.

➲ The project will also provide incentives to the States to leverage private funding through Public Private Partnership (PPP) concessions and pilot initiatives.

Burden of road crashes on Indian economy:

➲ According to a World Bank study, road crashes are estimated to cost the Indian economy between 5% to 7% of GDP a year.

➲ Each year road accidents in India kill about 1,50,000 people and injure another 4,50,000. More than half of the victims are pedestrians, cyclists, or motorcyclists and almost 84% of all fatalities are among road users between the working ages of 18-60 years.

➲ Poor households that account for over 70% of crash victims bear a higher proportion of the socio-economic burden of road crashes due to loss of income, high medical expenses and limited access to social safety nets.

STERLITE COPPER PLANT IN THOOTHUKUDI

Why in news?

➲ The teams from Sterlite Copper, a part of the Vedanta Group have been running around to get its legal issues fixed in order to re-open its plant at Thoothukudi which was closed in 2018.

➲ But now even as the case is in the Supreme Court, the company suddenly announced that it is selling off the plant.

➲ Vedanta, in conjunction with Axis Capital, has invited expression of interest (EOI) for the sale of its copper plant along with its other units, which includes the smelter complex (primary and secondary), sulphuric acid plant and copper refinery among others.

Why is the Sterlite copper plant up for sale?

➲ Ever since the plant was sealed in 2018 by the Tamil Nadu government after seeking advice from the

Tamil Nadu Pollution Control Board (TNPCB), the company has been running from pillar to post to re-open the plant.

◯ Sterlite Copper has also been incurring a loss of five crore per day since it went under lock and key. Even if the Supreme Court allowed them to re-open the company, it would need around ₹800 to ₹1,000 crore to revamp the plant.

Why was the plant under lock and key?

Fisherman Issue:

◯ The fishermen were worried that the effluents discharged by the plant would pollute the sea which will in turn ruin their livelihoods.

◯ In 2010, the Madras High Court ordered immediate closure of the plant for not complying with environmental norms. The Supreme Court later stayed the High Court's order.

Sulphur dioxide leak:

◯ The company got into troubled waters again in 2013 after a sulphur dioxide leak.

◯ But the Supreme Court allowed them to function after the payment of a fine of ₹100 crore for polluting land and water by running the company without approval for a considerable period of time.

Protest by local:

◯ In 2018, after the company announced that it would be enhancing its capacity, large-scale protests from local and neighbouring localities broke out.

◯ In May, the protests turned violent and the police open fired which led to the death of 13 civilians. A week later the Tamil Nadu government sealed the plant.

What was the impact of the closure of the plant?

◯ India has shifted from being a large net exporter of refined copper to now being a net importer of copper during the last four years since the shutdown of the Tuticorin plant.

◯ According to data provided by Care Ratings, India is now importing copper at a historically higher price close to around $9600 per tonne which is around 50% higher as compared to the average prices of copper when India was a net exporter of the same (around $6500 per tonne).

◯ Sterlite was a major domestic supplier of phosphoric acid with a capacity of 2,20,000 metric tonnes, which is a key raw material for fertilizer manufacturing companies. These fertilizer units were impacted due to stoppage of supplies and had to start importing.

◯ While operational, it was the largest supplier of sulphuric acid (used in detergent and chemical industries) in Tamil Nadu, and had a 95% share of the market.

Why was a part of the Sterlite plant allowed to function during the COVID-19 pandemic?

◯ On April 27, 2021, when the second wave of the pandemic was at its peak the Supreme Court granted permission to re-open two oxygen plants at Sterlite Copper's Thoothukudi plant.

◯ While granting permission, it noted that this was done because of national need and that it does not mean they are favouring the Vedanta Group.

◯ The Tamil Nadu government immediately constituted a seven-member committee headed by the then district collector to oversee proper functioning of the oxygen plants.

TELANGANA GOT WORLD'S LARGEST INNOVATION CAMPUS T-HUB 2.0

Why in news?

◯ Recently, Telangana Chief Minister inaugurated the new T-Hub 2.0, an incubation facility to boost business and innovation in the state.

◯ The business incubator facility has been developed to boost the technology innovation ecosystem in the state and attract new investments.

◯ The first T-Hub was launched on the campus of the Indian Institute of Technology, Hyderabad, under the name of Catalyst on an area of 70,000 square feet.

What is T-hub 2.0?

◯ T-Hub 2.0 has been built at an estimated cost of Rs 276 crore in an area covering 5.82 lakh square feet and the building has been designed by a Korean company.

◯ The multi-storied building being inaugurated at Raidurg in Hitec City has been divided into 10 floors that will house different centers to promote an innovation ecosystem.

◯ The new facility is on its way to becoming the world's largest innovation campus.

◯ While one of the floors will be dedicated solely to venture capitalists, other floors will house a state innovation cell to promote rural talent, a center of excellence in cyber security, a center for innovation and entrepreneurship, along with representation from the Dept of Science and Technology, Atal Innovative Mission on Artificial Intelligence.

Focus:

◯ T-Hub 2.0 will focus on Incubation and acceleration while also providing support to startups, giving mentorship, and bringing in a global pool of experts.

- T-Hub has supported nearly 1100 startups since 2015 and raised 10,000 crores through funding. 215 startup companies will be shifting their base of operations from the old building to T-Hub 2.0.

Way Forward:

- The government has indicated that in the coming time, the T-Hub will have five regional centers spread out in Warangal, Khammam, Nizamabad Kareemnagar, and Mahbubnagar.

SECURITY

INDIA BANGLADESH JOINT MILITARY EX SAMPRITI-X

Why in news?

- As part of the ongoing India Bangladesh bilateral defence cooperation, a joint military training exercise Ex SAMPRITI-X is being conducted from 05 June to 16 June 2022.

Venue

- It will be conducted at Jashore Military Station in Bangladesh.

Aim

- Exercise SAMPRITI is an important bilateral defence cooperation endeavour conducted alternately by both countries which aims to strengthen and widen the aspects of interoperability and cooperation between both the armies.
- The aim of the exercise is to strengthen interoperability between the two armies and to understand each other's tactical drills and operational techniques.

Key Highlights

- During the joint military exercise, armies of both the Nations will share expertise in multiple simulated scenarios of Counter Terrorism, Humanitarian Assistance & Disaster Relief and UN Peacekeeping Force under UN mandate.
- The exercise schedule is progressively planned in such a manner that the participants will initially get familiar with each other's organisational structure and tactical drills.
- As the exercise progresses, joint tactical exercises will be conducted wherein the joint battle drills of both contingents will be practised.

Way Forward

- In addition to sharing best practices and understanding each other at the tactical level, this exercise is an opportunity for greater cultural understanding to strengthen trust and cooperation between armies of both the Nations.
- The exercise will benefit both the armies by gaining from each other's vast experience which will further contribute to peace and stability in the region.

STICKY BOMBS

Why in news?

- With the Amarnath Yatra around the corner, security forces in Jammu and Kashmir are concerned over terrorist groups possessing 'sticky bombs'.
- They are reshaping their standard operating procedure for the pilgrimage.

What are sticky bombs?

- These are explosives that can be attached to vehicles and detonated remotely.
- Sticky bombs, which were also used by the British forces during the World War II, can be put on any vehicle and detonated through a remote control or an in-built timer.

New phase of terrorism:

- The 'sticky bombs' emerged on the terror scene in Kashmir in February 2021when these were recovered from Samba of Jammu region, indicating initiation of a new phase of terrorism in the union territory.
- It was the first such recovery of "sticky bombs", used largely in Afghanistan and Iraq. In India, it was used by suspected Iranian terrorists who targeted the vehicle of an Israeli diplomat in February 2012, resulting in injury to his wife.

Amarnath Yatra:

- Concerned over the development, the security agencies reworked their strategy, especially keeping in mind the Amarnath Yatra beginning June 30.
- About three lakh pilgrims are likely to take part in the pilgrimage to the cave shrine located in the upper reaches of south Kashmir. It is expected to end on August 11.

"EX KHAAN QUEST 2022"

Why in news?

➲ A Multinational Peacekeeping exercise "Ex Khaan Quest 2022" featuring participation from military contingents from 16 countries has commenced in Mongolia.

Aim

➲ The 14 day exercise is aimed at enhancing interoperability, building military to military relationships, developing peace support operations and military readiness among participating nations.

Key Highlights:

➲ The exercise will enable sharing of best practices between the Armed Forces of participating nations and will include field training exercises, combat discussions, lectures and demonstration.

➲ The military exercise will enhance the level of defence co-operation between Indian Army and participating countries especially with the Mongolian Armed Forces, which will enhance bilateral relations between the two countries.

India's participation:

➲ Indian Army is represented by a contingent from the LADAKH SCOUTS.

BALTOPS NAVAL EXERCISE

Why in news?

➲ Recently, NATO started nearly a two-week United States-led naval exercise on the Baltic Sea.

Participants:

➲ It was started with more than 7,000 sailors, airmen and marines from 16 nations, including two aspiring to join the military alliance, Finland and Sweden.

About BALTOPS naval exercise:

➲ The annual BALTOPS naval exercise, initiated in 1972, is not held in response to any specific threat.

➲ As NATO's close partners, Finland and Sweden have participated in the naval drill since the mid-1990s.

Why joining of Finland and Sweden is in news?

➲ Finland and Sweden both have a long history of military non-alignment before their governments decided to apply to join NATO in May, a direct result of Russia's February 24 invasion of Ukraine.

➲ Over the past years, Russia has repeatedly warned Finland and Sweden against joining the Western military alliance and warned of retaliatory measures if they did.

Why Russia is against joining of Finland & Sweden?

➲ Baltic Sea is a strategically important body of water — "one of the great seaways of the world."

➲ From Russia's perspective, Finland and Sweden joining NATO will be "very problematic" and leave Russia in a difficult military position as the Baltic Sea's coastline would be almost completely encircled by NATO members, except for Russia's Baltic exclave of Kaliningrad and the Russian city of St. Petersburg and its surrounding areas.

Why Turkey has objected?

➲ Turkey, a NATO member that has had good relations with Russia, has objected to Finland and Sweden joining the military alliance, citing their alleged support for a Kurdish group that Turkey labels as terrorist. NATO's chief has been trying to resolve the dispute.

INDIA HANDS OVER 12 HIGH SPEED GUARD BOATS TO VIETNAM

Why in news?

➲ Recently, Raksha Mantri handed over 12 High Speed Guard Boats to Vietnam during his visit to Hong Ha Shipyard in Hai Phong.

➲ The project is a glowing example of 'Make in India, Make for the World' as envisioned by Indian Prime Minister.

Key Highlights:

➲ The boats have been constructed under the Government of India's $US 100 million Defence Line of Credit to Vietnam.

➲ The initial five boats were built in the Larsen & Toubro (L&T) Shipyard in India and the other seven in Hong Ha Shipyard.

Background:

➲ Hanoi has procured the 12 boats under the LoC extended in 2014.

➲ In 2016, India has extended another $500-million defence LoC to Vietnam and discussions are under way to identify the equipment.

Indian Defence Minister's recent visit:

➲ The Raksha Mantri is on a three-day official visit to Vietnam.

➲ Both sides signed a 'Joint Vision Statement on India-Vietnam Defence Partnership towards 2030' to enhance defence cooperation.

➲ An MoU to simplify procedures for mutually beneficial logistic support was also inked between the two countries.

INDIA, EU HOLD FIRST-EVER SECURITY, DEFENCE DIALOGUE

Why in news?

➲ Signifying the growing ties with the European Union (EU), India held the first-ever Security and Defence Consultations with it.

➲ The maiden dialogue between India and the EU took place in Brussels pursuant to a decision taken at the India-EU Summit in July 2020.

Key Highlights:

➲ The two sides reviewed the entire gamut of their defence relations and evolving security situation in Europe, India's neighbourhood and the Indo-Pacific.

➲ Both sides noted a number of positive developments in the area of security and defence cooperation in recent years, including the establishment of a regular maritime security dialogue, which met for the second time in February 2022, the first-ever joint naval exercises held in June 2021, and a number of joint workshops on the subject of fostering maritime security.

➲ Both sides during the consultations also discussed various means of increasing India-EU cooperation on maritime security, implementation of the European code of conduct on arms export to India's neighborhood, cooperation in co-development and co-production of defence equipment, including India's participation in Permanent Structured Cooperation (PESCO) in the area of security and defence policy.

➲ Both sides agreed to increase India-EU defence and security cooperation as an important pillar of the bilateral strategic relations.

Way Forward:

➲ The next consultations will be held in Delhi at a mutually agreed convenient time. The dialogue took place at a time when the Ukraine conflict is raging and many European nations condemning Russia for it.

➲ India, so far, has abstained from voting against Moscow in the United Nations. However, India has all along called for dialogue to end the conflict at the earliest.

VL-SRSAM MISSILE SYSTEM SUCCESSFULLY TEST-FIRED (PAGE NO. 8)

Why in news

➲ Recently DRDO successfully flight tested Vertical Launch Short Range Surface to Air Missile (VL-SRSAM).

About VL-SRSAM

➲ It is an indigenously developed shipborne weapon system.

➲ It is a Vertical Launch Short Range Surface to Air Missile.

➲ It has been designed to strike at the high-speed airborne targets at the range of 40km to 50km and at an altitude of around 15km.

➲ It features mid-course inertial guidance through active radar and fiber optic gyroscope. Its launch was conducted to validate integrated operation of all the components of the system.

➲ The VL-SRSAM missile has been developed by the Defence Research and Development Laboratory

(DRDL) in coordination with the Research Centre Imarat (RCI) besides the Research & Development Establishment (Engineers), based at Pune.

Way forward

➲ The success test of this missile will further enhance the defence capability of Indian Naval Ships against the aerial threats.

ISKANDER-M MISSILE SYSTEM

Why in news?

➲ Russia has promised its ally Belarus delivery of nuclear- capable missiles, which can use ballistic or cruise missiles, in their conventional and nuclear versions.

What is the Iskander-M missile system?

➲ Codenamed "SS-26 Stone" by NATO, Iskander-M is a term used by Russia to define both the transporter-erector launch system and the short-range ballistic missile (SRBM) it fires.

➲ The system can also fire ground-launched cruise missiles (GLCMs) – the SSC-7 and the SSC-8.

➲ The Iskander-M system has been exclusively used by the Russian military, whereas Iskander-E is the one meant for export.

What is the missile's capability and range?

➲ The Iskander-M missile has a range of 500 km and it can carry a payload of up to 700 kg. It is capable of carrying both conventional and nuclear warheads.

➲ The conventional warheads can be equipped with include cluster bombs, electromagnetic pulse (EMP) warheads and bunker-buster munitions, according to US-based Missile Defence Advocacy Alliance (MDAA).

➲ The export variant, Iskander-E, has a range of 280 km with a reduced 480 kg payload.

When was it inducted and first used in combat?

➲ While the Iskander system was inducted by Russia in 2006, its development picked pace in the late 1980s after the "Oka" SRBM or the OTR-23 was banned under the Intermediate Nuclear Forces Treaty.

➲ The Oka was Russia's first attempt to replace the Soviet Scud missiles. Iskander was the second. Russia first used the Iskander in combat in Georgia in 2008.

➲ The Iskander missiles are designed to confuse missile defences by flying on a low trajectory and manoeuvring in flight to strike targets within 2 to 5 metres accuracy.

What does its proposed delivery to Belarus mean?

➲ Russia has made the announcement at the time when the G-7 meets in Germany. It is also one more time that it has raised nuclear weapons as a sort of warning to the West against climbing the escalation ladder in the Ukraine war.

➲ In the past too, Russia has used the Iskander system to project power against Europe, more so because of its ability to be fitted with tactical nuclear warheads.

➲ In 2012, it said that the weapon could be used to target Europe's missile defences.

➲ The Iskander system has already been deployed in Kaliningrad, a Russian exclave, from where it can be fired to target NATO forces in Poland, the Baltic States, and Sweden.

INDIGENOUS ADVANCED LIGHT HELICOPTER MK III SQUADRON COMMISSIONED

Why in news?

➲ Recently, 835 Squadron (CG), an indigenous Advanced Light Helicopter (ALH) MK III squadron, was commissioned into Indian Coast Guard at its Air Enclave in Porbandar, Gujarat.

➲ The commissioning of this squadron marks a tremendous leap towards self-reliance in the field of Search and Rescue (SAR) and maritime surveillance, in line with Prime Minister's vision of 'Aatmanirbhar Bharat'.

Key features of ALH MK III helicopters:

➲ The ALH MK III helicopters have been indigenously manufactured by Hindustan Aeronautics Limited (HAL).

➲ They feature state-of-the-art equipment including advanced RADAR as well as Electro optical sensors, Shakti engines, full glass cockpit, high-intensity searchlight, advanced communication systems, automatic identification system as well as SAR homer.

➲ The features enable them to undertake maritime reconnaissance as well as carry out SAR at extended

ranges even while operating from ships during both day and night.

➲ The aircraft has the ability to switch roles from an offensive platform with heavy machine gun to that of a benign one carrying a Medical Intensive Care Unit to facilitate transfer of critically ill patients.

Background:

➲ So far, 13 ALH MK-III aircraft have been inducted in the Indian Coast Guard in a phased manner and four of these aircraft are positioned at Porbandar.

PADMA, THE CENTRALISED PAY SYSTEM FOR INDIAN COAST GUARD LAUNCHED

Why in news?

➲ Recently, Pay Roll Automation for Disbursement of Monthly Allowances (PADMA), an automated Pay & Allowances module for the Indian Coast Guard was inaugurated by Ministry of Defence.

What is PADMA?

➲ PADMA is an automated platform leveraging latest technology which will provide seamless and timely disbursal of Pay & Allowances to around 15,000 Indian Coast Guard personnel.

➲ This module has been developed under the aegis of Defense Accounts Department and will be operated by Pay Accounts Office Coast Guard, Noida.

Promoting E-Governance:

➲ The Government has campaigned for Digital India to ensure dedicated services and reduce manual intervention at every level & to promote E-Governance in a big way.

➲ Launch of PADMA will strengthen the Digital India concept.

➲ Also, it is an 'Atmanirbhar Bharat' initiative as the entire module has been designed and developed by Indian entrepreneurs assisted by domain experts.

INDIA SUCCESSFULLY TESTS HIGH-SPEED EXPENDABLE AERIAL TARGET ABHYAS

Why in news?

➲ Recently, India successfully flight-tested the indigenously developed high-speed expendable aerial target (HEAT), ABHYAS, from the Integrated Test Range (ITR) in Chandipur off the Odisha coast.

➲ The target aircraft was flown from a ground-based controller in a pre-designated low-altitude flight path, which was monitored by various tracking sensors deployed by the ITR, including radar and an electro-optical targeting system.

Developed by:

➲ ABHYAS is designed & developed by Aeronautical Development Establishment of Defence Research and Development Organisation (DRDO).

Key features of ABHYAS:

➲ The air vehicle was launched using twin under-slung boosters which provide the initial acceleration to the vehicle.

➲ It is powered by a small gas turbine engine to sustain a long endurance flight at high subsonic speed.

➲ The target aircraft is equipped with Micro-Electromechanical Systems-based Inertial Navigation System for navigation along with the Flight Control Computer for guidance and control along with Indigenous Radio Altimeter for very low altitude flight and Data Link for encrypted communication between the Ground Control Station and Target Aircraft.

➲ The vehicle is programmed for fully autonomous flight.

ENVIRONMENT

KEEP ESZ OF 1 KM AROUND FORESTS: SC

Why in news?

➲ The Supreme Court directed that every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.

Background:

➲ The judgment came on a petition instituted for the protection of forest lands in the Nilgiris district of Tamil Nadu. Subsequently, the scope of that writ petition was enlarged by the court so as to protect such natural resources throughout the country.

- In a series of directions, the court held that in case any national park or protected forest already has a buffer zone extending beyond one km, that would prevail.
- In case the question of the extent of buffer zone was pending a statutory decision, then the court's direction to maintain the one-km safety zone would be applicable until a final decision is arrived.

Mandate:

- The purpose of declaring ESZs around national parks, forests and sanctuaries is to create some kind of a "shock absorber" for the protected areas.
- These zones would act as a transition zone from areas of high protection to those involving lesser protection.

Key Highlights of the judgement:

- No permanent structure will be allowed within the ESZ.
- It also directed the Chief Conservator of Forests of all states and UTs to prepare a list of existing structures within the ESZs and submit a report to it within a period of three months.
- For this purpose, such authorities can take assistance from governmental agencies for satellite imaging or photography using drones.

WORLD ENVIRONMENT DAY 2022

Why in news?

- Led by the United Nations Environment Programme (UNEP), World Environment Day (WED) is celebrated on June 5 every year to raise awareness about degrading environmental conditions and to encourage people globally to take positive environmental actions, to help create a better future.
- The year 2022 marks the 50th WED.

Theme:

- The theme for 2022 is 'Only One Earth.'
- This was also the slogan for the 1972 conference in Stockholm, where the annual global event was first instituted on June 5.

Background:

- The idea of 'World Environment Day' was first introduced at the United Nations Conference on the Human Environment - also known as the Stockholm conference in 1972.

- The conference had become the first world to have 'environment' on its agenda. Along with the day, the conference saw the creation of the United Nations Environment Programme.
- First held in 1973, the day is a global platform for public outreach, with participation from over 143 countries annually.

How it will be celebrated in India?

- On the occasion of World Environment Day, the Centre is set to launch a global initiative called 'LiFE Movement'.
- The movement was first introduced by Prime Minister Narendra Modi during the COP26 climate change summit in Glasgow.
- PM Modi will host a session on 'crafting a conscious planet' with Sadhguru.

'LIFESTYLE FOR THE ENVIRONMENT (LIFE) MOVEMENT'

Why in news?

- Recently, Prime Minister launched the 'Lifestyle for the Environment (LiFE) Movement' via video conferencing.
- The launch also initiated the 'LiFE Global Call for Ideas and Papers', inviting individuals, universities, think tanks, non-profits and others worldwide to submit measurable and scalable behavior change solutions that can drive climate-friendly behaviors among individuals, communities and organisations.

What is LiFE?

- The idea of LiFE was introduced by the Prime Minister during the 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow 2021.
- The idea promotes an environmentally conscious lifestyle that focuses on 'mindful and deliberate utilisation' instead of 'mindless and wasteful consumption'.

Aim

- The LiFE Movement aims to utilise the power of collective action and nudge individuals across the world to undertake simple climate-friendly actions in their daily lives.

➲ The LiFE movement, additionally, also seeks to leverage the strength of social networks to influence social norms surrounding climate.

Pro-Planet People' (P3):

➲ The Mission plans to create and nurture a global network of individuals, namely 'Pro-Planet People' (P3), who will have a shared commitment to adopt and promote environmentally friendly lifestyles.

➲ Through the P3 community, the Mission seeks to create an ecosystem that will reinforce and enable environmentally friendly behaviours to be self-sustainable.

➲ The Mission envisions replacing the prevalent 'use-and-dispose' economy governed by mindless and destructive consumption with a circular economy, which would be defined by mindful and deliberate utilization.

Lord Nicholas Stern, international climate economist coined word 'FEAST' during the event:

➲ Prof. Cass Sunstein, author of Nudge Theory spoke about the EAST framework of behaviour change.

> ➢ E stands for 'easy', and the basic idea is that if the goal is to help individuals or households, or companies to choose an environmentally preferable approach, to make it easy is often the best thing to do.

> ➢ A is for 'attractive'. India and other nations have often used attractiveness as a signal to promote environmentally preferable choices.

> ➢ S stands for 'social'. It creates a kind of self-fulfilling prophecy. Norms are essential for improving lifestyles.

> ➢ T stands for 'timely'. If people are given information or a reminder or a signal at exactly the right time when they are making the decision, or maybe the hour before, it's more likely to be effective.

> ➢ He added one letter to the framework – the letter is F. F stands for 'fun'. Often environmentally preferred behaviour, better lifestyles actually are fun. They make people smile.

WORLD'S FIRST FISHING CAT CENSUS DONE IN CHILIKA

Why in news?

➲ Recently, world's first population estimation of the fishing cat, was conducted outside the protected area network.

Stakeholders:

➲ It was conducted by the Chilika Development Authority (CDA) in collaboration with the Fishing Cat Project (TFCP).

Key Highlights:

➲ The Chilika Lake, Asia's largest brackish water lagoon, has 176 fishing cats.

Fishing CAT in Chilika

➲ According to the CDA, the estimation was conducted in two phases. Phase 1 was conducted in 2021 in the 115 sq.km marshland in the north and north-eastern section of Chilika and its surrounding areas.

➲ Phase 2 was conducted in 2022 in the Parikud side along the coastal islands of Chilika.

Methodology:

➲ A total of 150 camera traps were deployed in two phases with each fixed in the field for 30 days.

➲ Spatially explicit capture recapture (SECR) method was used to analyse the data.

Habitat of fishing cat:

➲ The fishing cats are globally threatened cats that occur in wetlands such as marshlands, mangroves and flooded forests in major South and Southeast Asian river basins starting from the Indus in Pakistan till the Mekong in Vietnam and in the island nations of Sri Lanka and Java.

➲ They are found in 10 Asian countries but have remained undetected in Vietnam and Java since the last decade or so.

Threat to Wetlands in Asia:

➲ Earlier in 2022, CDA had declared its intent to adopt a five-year action plan for fishing cat conservation in Chilika.

➲ Wetlands in Asia are being lost at alarmingly rapid rates and proper data on their current status or even baseline data in many countries are missing.

Way Forward:

➲ The status of many wetland species remains understudied and highly threatened.

➲ Tracking specialist species such as the fishing cat gives us an indication of what might be happening to these ecosystems, which are safeguards against climate change and droughts.

LEADERS IN CLIMATE CHANGE MANAGEMENT' (LCCM)

Why in news?

➲ In conjunction with the World Environment Day, the National Institute of Urban Affairs (NIUA) and World

Resources Institute (WRI) India, jointly announced 'Leaders in Climate Change Management' (LCCM), a practice-based learning program.

➲ The launch also marked the achievements of the Ministry of Housing and Urban Affairs towards India's urban climate goals.

Tripartite MoU:

➲ To facilitate this face-to-face learning program, the Administrative Training Institute (ATI), Mysuru, also singed a tripartite Memorandum of Understanding (MoU) with NIUA and WRI India, becoming the first delivery partner of the LCCM program.

Aim:

➲ It aims at building capacity among urban professionals to lead climate action across sectors and geographies in India.

➲ LCCM envisions capacitating 5,000 professionals, including mid to junior-level government officials and frontline workers, and preparing them to champion climate change adaptation and mitigation solutions towards a coordinated effort to achieve India's climate commitments.

Background:

➲ At COP26, Prime Minister Narendra Modi proposed a five-fold strategy 'Panch Amrit' to global leaders, extending India's co-operation to meet the 1.5 degrees Celsius targets.

➲ The LCCM program, designed and implemented in partnership with the United Nation Environment Programme (UNEP) and Indian School of Business (ISB), aims to strengthen India's workforce to achieve this goal.

➲ LCCM is a blended learning program for urban practitioners looking to upskill and prepare themselves to deliver effective climate action.
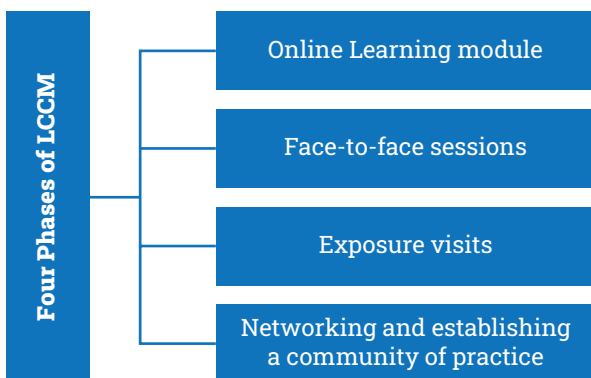
About Leaders in Climate Change Management (LCCM)

➲ Leaders in Climate Change Management is a capacity-building program that seeks to build a pool of leaders to champion and lead climate action - across sectors and geographies.

➲ The program has been designed and implemented through core partners, being, National Institute of

Urban Affairs (NIUA), World Resources Institute (WRI) – India, United Nation Environment Programme (UNEP), and Indian School of Business (ISB).

About NIUA:

➲ Established in 1976, the National Institute of Urban Affairs (NIUA) is India's leading national think tank on urban planning and development.

➲ As a hub for the generation and dissemination of cutting-edge research in the urban sector, NIUA seeks to provide innovative solutions to address the challenges of a fast-urbanizing India, and pave the way for more inclusive and sustainable cities of the future.

About WRI India:

➲ WRI India, an independent charity legally registered as the India Resources Trust, provides objective information and practical proposals to foster environmentally sound and socially equitable development.

➲ Its work focuses on building sustainable and liveable cities and working towards a low carbon economy. Through research, analysis, and recommendations, WRI India puts ideas into action to build transformative solutions to protect the earth, promote livelihoods, and enhance human well-being.

➲ It is inspired by and associated with World Resources Institute (WRI), a global research organization.

GLACIAL ADVANCES IN THE YANKTI KUTI VALLEY SYNCHRONIZES WITH CLIMATE VARIABILITY

Context:

➲ Multiple events of glacial advances have been witnessed from the Yankti Kuti valley situated in the extreme eastern part of Pithoragarh district, Uttarakhand, since 52 thousand years (MIS 3) that synchronises with climate variability, according to a new study.

Background:

➲ Many researchers have provided information on the nature of glaciation in the Central Himalayas by

employing various modern dating methods.

➲ However, the chronological data for glacial landforms in the Central Himalayas is still limited due to the lack of dating material in the study areas because of the inaccessibility of these areas.

➲ Thus a correlation between two major climatic systems: the Indian summer Monsoon and the mid-latitude westerlies and glacier advance remained speculative.

New Study:

➲ Scientists of the Wadia Institute of Himalayan Geology, has reported first time the oldest glacial advance during 52 Kilo years from the Central Himalaya, as the evidence of glacial advance during the Last Glacial Maxima and subsequently younger time periods have already been reported from many parts of the Central Himalaya.

Key Highlights:

➲ They found that moisture-deficient valleys of semi-arid Himalayan regions respond sensitively to enhance precipitation. The study suggests a regional synchronicity of glacier response to climate variability since MIS 3.

➲ The study carried out was in accordance with the synoptic-scale, climatic perturbation triggered by the North Atlantic millennial-scale climate oscillations.

➲ The research provides a robust chronology and climatic evidence indicating significant ice volume depicted by the height of glacial material (moraine) during MIS 3.

Way Forward:

➲ The study can help enhance the existing knowledge of the relationship between Himalayan climate and glacier dynamics and can help assessing the role of Indian Summer Monsoon (ISM) versus westerlies in driving the valley glaciers in the Central Himalayan region.

GREEN OPEN ACCESS RULES, 2022

Why in news?

➲ In order to further accelerate ambitious renewable energy programmes, with the end goal of ensuring access to affordable, reliable, sustainable and green energy for all, Green Open Access Rules, 2022 have been notified by Ministry of Finance.

➲ These rules are notified for promoting generation, purchase and consumption of green energy including the energy from Waste-to-Energy plants.

Key Highlights:

➲ The notified Rules enable simplified procedure for the open access to green power. It will enable faster approval of Green OA, Uniform Banking, Voluntary purchase of RE power by commercial & industrial consumers, Applicability of OA charges etc.

GREEN OPEN ACCESS RULES 2022

➲ Commercial and Industrial consumers are allowed to purchase green power on voluntarily basis.

➲ Captive Consumers can take power under Green Open Access with no minimum limitation.

➲ Discom Consumers can demand for supply of Green power to them.

The salient features of the Rules are as under:

➲ The Green Open access is allowed to any consumer and the limit of Open Access Transaction has been reduced from 1 MW to 100 kW for green energy, to enable small consumers also to purchase renewable power through open access.

➲ Provide certainty on open access charges to be levied on Green Energy Open Access Consumers which includes transmission charges, wheeling charges, cross-subsidy surcharge and standby charges. Cap on increasing of cross-subsidy surcharge as well as the removal of additional surcharge, not only incentivise the consumers to go green but also address the issues that have hindered the growth of open access in India.

➲ Transparency in the approval process of the open access application. Approval to be granted in 15 days or else it will be deemed to have been approved subject to fulfilment of technical requirements. It will be through a national portal.

➲ Determination of green tariff: The tariff for the green energy shall be determined separately by the Appropriate Commission, which shall comprise of the average pooled power purchase cost of the renewable energy, cross-subsidy charges if any, and service charges covering the prudent cost of the distribution licensee for providing the green energy to the consumers.

➲ The Rules will help to streamlining the overall approval process for granting Open Access including timely approval, to improve predictability of cash flows for renewable power producers. It will also bring Uniformity in the application procedure.

➲ Banking of surplus green energy with the distribution licensee mandated.

➲ There shall be a uniform renewable purchase obligation, on all obligated entities in area of a distribution licensees. It has also included the Green Hydrogen/Green Ammonia for fulfilment of its RPO.

➲ Consumers will be given the green certificates if they consume green power.

➾ Cross subsidy surcharge and additional surcharge shall not be applicable if green energy is utilized for production of green hydrogen and green ammonia.

MOU BETWEEN INDIA & JAPAN FOR JOINT RESEARCH ON AIR QUALITY AND CLIMATE CHANGE

Why in news?

➾ The Union Cabinet was apprised of the signing of Memorandum of Understanding (MoU) to establish collaborative guidelines between the National Institute for Environmental Studies, Japan and Aryabhatta Research Institute of Observational Sciences (ARIES), India.

➾ It aims to carry out and implement joint research (hereinafter referred to as "Joint Research") on air quality and climate change.

About ARIES:

➾ Aryabhatta Research Institute of Observational Sciences (ARIES) is an Autonomous Research Institute established under the Department of Science and Technology, Government of India.

➾ ARIES is a centre of excellence for research in Astronomy & Astrophysics and Atmospheric Sciences.

➾ It carries out research on air pollution and climate change on earth, formation and evolution of sun, stars and galaxies.

The following are some of the possible activities

➾ Joint use and operation of scientific instruments

➾ Exchange of scientific and technical information on observing methods

➾ Joint analysis of observational data and making scientific reports

➾ Joint educational and research activities

➾ Exchange of visiting scholars, including PhD students for the purpose of conducting research

➾ Joint scientific workshops and/or seminars

About NIES:

➾ The National Institute for Environmental Studies (NIES) is Japan's only research institute that undertakes a broad range of environmental research in an interdisciplinary and comprehensive manner.

➾ NIES works to produce scientific findings on environmental protection.

➾ NIES is working on research projects that include consolidating the institute's research foundation through basic research, data acquisition and analysis, preservation and provision of environmental samples.

CLIMATE CHANGE POSES SERIOUS RISK TO MENTAL HEALTH: WHO

Why in news?

➾ The World Health Organisation (WHO) has said that climate change poses serious risks to mental health

and well-being and urged countries to include mental health support in their climate crisis response.

How climate change is a risk to mental health and well-being?

➾ Climate change has emerged as the biggest crisis on the planet with impacts being seen across the world. From melting of glaciers to uncontrolled wildfires to unpredictable flooding, climate-led extreme events have become more intense and frequent in the last few years.

➾ The findings released in the WHO's policy brief, echo findings by the Intergovernmental Panel on Climate Change (IPCC) published in February which stated that fast-rising climate change poses a growing hazard to mental health and psychosocial well-being, ranging from emotional distress to anxiety, sadness, bereavement, and suicidal behaviour.

The new WHO policy brief suggests five key approaches for governments to address climate change's mental health effects:

- Integrate climate considerations into mental health programmes
- Integrate mental health support into climate action
- Expand on global commitments
- Develop community-based methods to minimise vulnerabilities
- Eliminate the substantial financing gap for mental health and psychosocial support
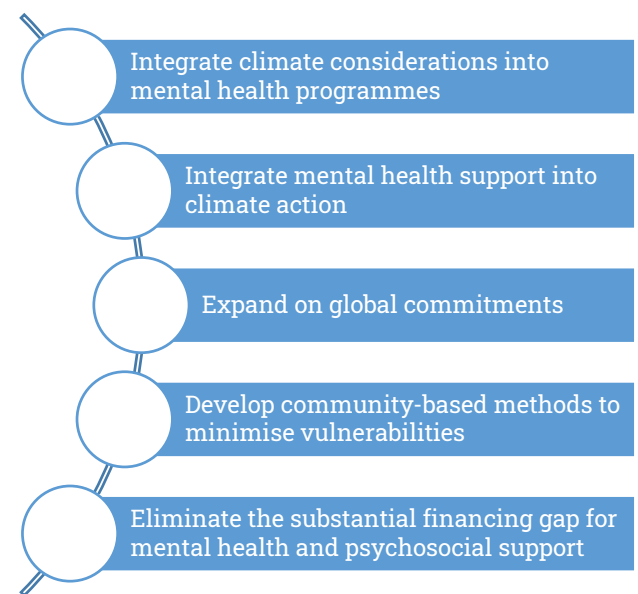
Global mental health burden:

➾ The impact of climate change on mental health is distributed on the basis of socioeconomic status, gender, and age, but it is obvious that climate change affects many of the social determinants that are already contributing to significant mental health burdens around the world.

➾ A survey conducted by WHO in 2021, among 95 countries, only nine included mental health and psychosocial support in their national health and climate change plans.

➾ WHO said that around a billion people worldwide suffer from mental illnesses, but three out of every four do not have access to the necessary services in low- and middle-income countries.

Approaches:

➲ WHO highlighted a national project in India that has scaled up disaster risk reduction in the country while also preparing cities to respond to climate risks and address mental health and psychosocial needs.

Way Forward:

➲ Climate change is affecting an already difficult situation for mental health and mental health services around the world.

➲ The countries should do more to protect people by increasing mental health and psychosocial assistance as part of disaster risk reduction and climate action.

➲

RECORD $14.5 BN INVESTMENT IN INDIAN RENEWABLE ENERGY SECTOR, SAYS IEEFA

Why in news?

➲ As per new report by the Institute for Energy Economics and Financial Analysis (IEEFA), investment in renewable energy in India reached a record $14.5 billion in the last fiscal (2021-22).

➲ It saw an increase of 125 per cent compared to FY2020-21 and 72 per cent over the pre-pandemic FY2019-20.

India: FY21/22 US$14.5bn Invested in Renewables

Acquisitions and bonds account for 75% of deal value

	$0	$1	$2	US$3 billion
Acquisitions	SB Energy			
	REC Solar Holdings			
	Vector Green			
	Adani Green Energy Limited			
Bonds	ReNew Power			
	Indian Railway Finance Corporation (IRFC)			
	Azure Power			
Debt	Reliance Industries (RIL)		*10 largest deals*	
JV deal	ReNew Power		*FY2021/22*	
Equity	Avaada Energy			

Factors attributing to its rise:

➲ After falling by 24 per cent from $8.4 billion in FY2019-20 to $6.4 billion in FY2020-21 when the pandemic curbed electricity demand, investment in renewable energy has made a strong comeback.

➲ The surge in renewables investment comes on the back of the revival of electricity demand after the Covid-19 lull and commitments by corporations and financial institutions to net-zero emissions and to exit fossil fuels.

Key investment deals:

➲ The key investment deals made during FY2021-22. It finds the majority of the money flowed through acquisitions, which accounted for 42 per cent of the total investment in FY2021-22. Most other big deals were packaged as bonds, debt equity investment and mezzanine funding.

➲ The largest deal was SB Energy's exit from the Indian renewables sector with a sale of assets worth $3.5 billion to Adani Green Energy Limited (AGEL).

➲ The other key deals included Reliance New Energy Solar's acquisition of REC Solar holding assets and a host of companies like Vector Green, AGEL, ReNew Power, Indian Railway Finance Corporation and Azure Power, raising money in the bonds market.

India's target of 175 GW of renewable energy capacity:

➲ India added 15.5 gigawatt (GW) of renewable energy capacity in FY2021-22, which brought the total installed renewable capacity (excluding large hydro) to 110 GW as of March 202, a long way off the target of 175 GW of renewable energy capacity by the end of 2022.

➲ Even with the surge in investment, renewable capacity will have to expand at a much faster rate to reach the target of 450 GW by 2030.

➲ The Indian renewable energy sector needs about $30-$40 billion annually to meet the 450 GW target. This would require a more than doubling of the current level of investment.

Way Forward:

➲ Rapid growth in renewable energy capacity will be needed to meet India's increasing electricity demand.

➲ To move to a sustainable pathway and reduce reliance on expensive fossil fuel imports, the government needs to act as an enabler by rolling out 'big bang' policies and reforms to accelerate the deployment of renewable energy.

➲ Investment is needed in flexible generation sources such as battery storage and pumped hydro; expansion of transmission and distribution networks; modernisation and digitalisation of the grid; domestic manufacturing of modules, cells, wafers and electrolysers; promoting electric vehicles; and promoting more decentralised renewable energy such as rooftop solar.

RHINO REINTRODUCTION A HIT IN ASSAM RESERVE

Why in news?

➲ The one-horned rhinos of western Assam's Manas National Park, bordering Bhutan, are expected to have high life expectancy and significant growth in population, the 14th Assam rhino estimation census has revealed.

- But on the flip side, the 500-sq.-km park does not have "a wider representation of calves and sub-adults" to sustain the population structure unless it is supplemented through conservation translocations.

Background:

- Manas, a UNESCO World Heritage Site and a tiger reserve, had about 100 resident rhinos prior to 1990, but a prolonged ethno-political conflict thereafter took a heavy toll with extremist groups known to have traded the horns of the herbivores for weapons.

Outcome of rhino reintroduction programme:

- A rhino reintroduction programme under the Indian Rhino Vision 2020 was started in 2006. This entailed the translocation of rhinos from Kaziranga National Park and Pobitora Wildlife Sanctuary besides orphans hand-reared at the Centre for Wildlife Rehabilitation and Conservation at Kaziranga.
- The current rhino population in the park was estimated at 40 after the census on April 1 and 2.
- The park's rhinos have a male-female sex ratio of 1:1, arrived at without considering 10 calves and five sub-adults. But such a population may suffer losses if not supplemented through translocations.

Measures to check speed of vehicles in National Park:

- The Kaziranga National Park authorities have restricted the speed of vehicles on the highway adjoining the park to 40 km per hour. This is an annual step taken to prevent vehicles from hitting animals that move out of the park during floods.
- Six sensor-based cameras have been installed at nine designated animal corridors of the park to measure the speed of vehicles and impose fines on those who violate the order.
- The cameras are equipped with automatic number plate recognising system with radar for determining speed.
- As per the orders of the National Green Tribunal, owners of vehicles that do not adhere to the speed limit will be penalised.

Way Forward:

- A suitable strategy to bring in more rhinos from other rhino-bearing areas is required so as to have a wider representation of calves and sub-adults over time.

SCIENTISTS FIND MICROPLASTICS IN FRESH ANTARCTIC SNOW FOR FIRST TIME

Why in news?

- Recently, scientists have found microplastics in freshly fallen Antarctic snow, which bring to light a serious threat to the Antarctic region.

Key Highlights:

- Scientists have found microplastics in freshly fallen Antarctic snow for the first time, which they said has

the potential to influence the climate by accelerating melting of ice.

- Previous studies have found that microplastics have negative impacts on the health of the environment, limiting growth, reproduction, and general biological functions in organisms, as well as negative implications for humans.

Concerns:

- At the time, there had been few studies investigating the presence of microplastics in the air, and it was unknown how widespread this problem was.
- The researchers found that there were plastic particles in every sample from the remote sites on the Ross Ice Shelf too. They collected snow samples from 19 sites across the Ross Island region of Antarctica and found microplastics in all of these.

Density:

- The plastic particles were also looked at under a microscope to identify their colour, size and shape.
- The researchers found an average of 29 microplastic particles per litre of melted snow, which is higher than marine concentrations reported previously from the surrounding Ross Sea and in Antarctic sea ice.
- Just next to the scientific bases on Ross Island, Scott Base, and McMurdo Station, the largest station in Antarctica, the density of microplastics was nearly three-times higher, with similar concentrations to those found in Italian glacier debris.

Sources of microplastics:

- There were 13 different types of plastic found, with the most common being PET, commonly used to make soft drink bottles and clothing.
- The possible sources of microplastics were examined. Atmospheric modelling suggested microplastics may have travelled thousands of kilometres through the air, however it is likely that the presence of humans in Antarctica has established a microplastic footprint.

GOVT TO STUDY DOLPHINS, HILSA IN GANGA TO ASCERTAIN RIVER'S HEALTH

Why in news?

- The National Mission for Clean Ganga (NMCG) will be conducting the study in collaboration with

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the Council Of Scientific And Industrial Research-National Environmental Engineering Research Institute.

Bio-indicators:

➲ Under this, bio-indicators like the population of dolphins and hilsa fish and micro-organisms will be studied to ascertain how much improvement has taken place in the health of the river.

➲ These bio-indicators play an important role in establishing the health of a river.

'Gyan Ganga':

➲ The study is part of a repository of studies and research being conducted by the NMCG on the Ganga river.

➲ The repository was being made under 'Gyan Ganga' an NMCG initiative focusing on research, policy and knowledge management on subjects related to the Ganga river.

➲ The impact of human intervention on microbial diversity and the origin of E.coli present in the Ganga river would also be studied.

National ranching project of hilsa fish:

➲ A national ranching project of hilsa fish is underway in the middle stretch of the Ganga.

➲ More than 6,00,000 hilsa adults have been ranched. This will support hilsa fish germplasm conservation and propagation in the river Ganga.

➲ Hilsa juveniles found in the upstream of the Farakka Barrage on the river near the West Bengal and Jharkhand border show that ranching efforts under the project are working.

Higher aquatic biodiversity:

➲ The increase in fish population due to the efforts of the NMCG and the Central Inland Fisheries Research Institute will also improve the prey base of the higher aquatic biodiversity such as river dolphins, crocodiles, turtles and birds of the Ganga, along with the livelihoods of fishermen.

➲ The last four years, around 190 fish species have been recorded from the river which provides livelihood and economic sustainability to the fishers residing in the banks of the river.

➲ The Ganga River and its basin is recognised for being one of the most populated in the world, and it nurtures vast biodiversity.

AUSTRALIAN SCIENTISTS DEVELOP MODEL TO SPOT SOFT CORALS MOST AT RISK OF BLEACHING

Why in news?

➲ Recently, Australian scientists have come up with a model that will help researchers quickly identify soft corals most vulnerable to bleaching from marine heatwaves, helping prioritise resources to preserve reefs.

What are coral reefs?

➲ Corals are marine invertebrates or animals not possessing a spine. Each coral is called a polyp and thousands of such polyps live together to form a colony, which grows when polyps multiply to make copies of themselves.

Corals are of two types; hard coral and soft coral.

➲ Hard corals, also called hermatypic or 'reef building' corals extract calcium carbonate (also found in limestone) from the seawater to build hard, white coral exoskeletons.

➲ Soft coral polyps, however, borrow their appearance from plants, attach themselves to such skeletons and older skeletons built by their ancestors.

➲ Soft corals also add their own skeletons to the hard structure over the years and these growing multiplying structures gradually form coral reefs. They are the largest living structures on the planet.

What is coral bleaching?

➲ Bleaching happens when corals experience stress in their environment due to changes in temperature, pollution or high levels of ocean acidity.

➲ Under stressed conditions, the zooxanthellae or food-producing algae living inside coral polyps start producing reactive oxygen species, which are not beneficial to the corals.

➲ So, the corals expel the colour-giving zooxanthellae from their polyps, which exposes their pale white exoskeleton, giving the corals a bleached appearance. This also ends the symbiotic relationship that helps the corals to survive and grow.

Mechanism involved:

➲ The researchers found one type of soft coral was

healthier during a heatwave and produced more algal cells than when temperatures were normal.

➲ Soft corals are often under-researched as they do not form reefs, though they are present in reef ecosystems.

➲ They grinds up wet, frozen samples of soft coral to create a puree, which is put through a centrifuge that separates algal cells from coral protein.

➲ Researchers can then look at the quantity of protein, algal cells and chlorophyll, which are all indicators of coral health.

Conclusion:

➲ Coral bleaching has struck many reefs around the world, including Australia's Great Barrier Reef, which was hit by four mass bleaching events in the past seven years.

➲ Soft corals take more time to bleach than hard corals but it would be "catastrophic" when they become affected.

INDIA'S NEWEST RECORDED SNAIL NAMED AFTER WESTERN GHATS

Why in news?

➲ Recently, the Western Ghats of Maharashtra have yielded a carnivorous land snail new to the world of science.

New species:

➲ The Haploptychius sahyadriensis, recorded from the northern Western Ghats of Maharashtra, is the third member of the genus Haploptychius.

➲ The other two, H. andamanicus and H. pfeifferi were recorded in the Andaman and Nicobar Islands in the 1860s.

Characteristic features:

➲ The 'Sahyadri snail' is distinguished from other Indian and Southeast Asia's Haploptychius in having a sub-oblique helical shell, low spire and presence of a strong parietal lamella.

➲ The new species also has a unique genital anatomy; it has a long penis with a penial sheath and hooks, atrium and vagina with longitudinal ridges and irregular transverse ridges but without any hooks.

➲ The species was placed in the genus Haploptychius based on the shell morphology and genital characters.

Endemic to Vishalgad Conservation Reserve:

➲ This species is endemic to Vishalgad Conservation Reserve in Shahuwadi tehsil of Maharashtra's Kolhapur.

➲ It is named after the type locality of the species in the northern part of the Western Ghats, which is Sahyadri in Sanskrit.

Future prospects:

➲ Other unexplored areas in the northern Western Ghats may potentially harbour more undescribed land snail species that could be endemic.

NEARLY 5 MN IN INDIA DISPLACED DUE TO CLIMATE CHANGE, DISASTERS IN 2021: UN

Why in news?

➲ Recently, the annual Global Trends Report by the UN Refugee Agency (UNHCR) was released.

➲ As per it, nearly five million people in India were internally displaced due to climate change and disasters in 2021.

Global scenario:

➲ It highlighted that globally 100 million people were forced to flee their homes in 2021 due to violence, human rights abuses, food insecurity, the climate crisis, war in Ukraine and other emergencies from Africa to Afghanistan.

Internal displacement:

➲ According to the Internal Displacement Monitoring Centre (IDMC), in 2021, there were 23.7 million new internal displacements globally due to disasters (these are in addition to those internally displaced due to conflict and violence). This represented a decrease of seven million, or 23 per cent, compared to the previous year.

➲ The largest displacements in the context of disasters in 2021 occurred in China (6.0 million), the Philippines (5.7 million) and India (4.9 million). Most disaster displacements during the year were temporary.

➲ The majority of the internally displaced persons returned to their home areas, but 5.9 million people worldwide remained displaced at the end of the year due to disasters.

Forcibly displaced people:

➲ At the end of 2021, 89.3 million people were forcibly displaced worldwide, including 27.1 million refugees, 21.3 million refugees under UNHCR's mandate, 5.8 million Palestine refugees under United Nations Relief and Works Agency for Palestine Refugees in the Near East's (UNRWA) mandate, 53.2 million internally displaced people, 4.6 million asylum seekers and 4.4 million Venezuelans displaced abroad.

➲ Asylum seekers submitted 1.4 million new claims. The United States of America was the world's largest recipient of new individual applications (188,900), followed by Germany (148,200), Mexico (132,700), Costa Rica (108,500) and France (90,200).

➲ By May 2022, more than 100 million people were forcibly displaced worldwide by persecution, conflict, violence, human rights violations or events seriously disturbing public order.

Climate crisis:

➲ The food scarcity, inflation and the climate crisis are adding to people's hardship. The number of refugees rose in 2021 to 27.1 million. Arrivals climbed in Uganda, Chad and Sudan among others.

Way Forward:

➲ The number of people forced to flee their homes has increased every year over the past decade and stands at the highest level since records began, a trend that can be only reversed by a new, concerted push towards peacemaking.

NEW SPECIES OF BAMBOO-DWELLING BAT FOUND IN MEGHALAYA

Why in news?

➲ Recently, scientists have discovered a new species of bamboo-dwelling bat in Ri Bhoi district of Meghalaya.

Details:

➲ The species, found near the forested patch of Nongkhyllem Wildlife Sanctuary, has been named Glischropus meghalayanus.

➲ The present discovery is the first report of a thick-thumbed bat not only from India but also from South Asia.

Characteristics:

➲ Thick-thumbed bats of the genus Glischropus are currently composed of four recognised species from Southeast Asia.

➲ The newly discovered species is small in size and has a dark brown colour with sulphur yellow belly.

➲ Two recently collected Glischropus specimens from Meghalaya in northeastern India extend the known distribution range of the genus westward into South Asia by ca. (approximately) 1,000 km.

➲ Morphological examination of these specimens and comparison with all known species in this genus

revealed marked differences in colouration, dental characters and bacular traits.

New Species of bamboo-dwelling **bat** found in **Meghalaya** has been named **Glischropus meghalayanus**

Another species of Bamboo-dwelling bats

➲ From the same forested patches outside the Nongkhyllem Wildlife Sanctuary, they found another species of disk-footed bat Eudiscopus denticulus which was a new record in India.

➲ Bamboo-dwelling bats are a particular kind of bats living in the internodes of bamboos with specialised morphological characters that help them to adopt to the life inside a bamboo.

Fact:

➲ With this new discovery, the total number of bat species known from India stands at 131.

➲ Meghalaya, a State with a small geographical area, harbours the highest bat diversity in the country with 67 species, which is about 51% of total bat species in the country.

EXPAND NOISE MONITORING IN CAPITAL: NGT PANEL

Tracking noise in the Capital

Why in news?

➲ Recently, an expert committee appointed by the National Green Tribunal (NGT) with the mandate to devise a legal framework to regulate noise pollution in Delhi has submitted its final report.

➲ The expert committee was headed by Justice (retd.) SP Garg.

Key Highlights:

➲ Expansion of noise monitoring network:

➲ It called for the expansion of Delhi's current noise monitoring network of 31 stations in proportion to the

city's area and population, while also suggesting that agencies other than the Delhi Police be empowered to act against violators.

- At present, only the Delhi Police can take penal action, while agencies such as the Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC) and Delhi Cantonment Board have no powers to take on-the-spot action against noise polluters.

Sound Level Meters (SLMs):

- It has also asked for all agencies to increase the number of sound level meters (SLMs) currently available with them so that real-time measurement of ambient noise levels could take place.
- According to the report, while the Delhi Police has 244 SLMs, the now-unified MCD has a total of 21 SLMs. NDMC and the revenue department have none, while the Delhi Cantonment Board has just one.

Designated authority:

- In addition to civic agencies and other local bodies not having punitive powers under the Noise Pollution (Regulation & Control) Rules, there is often confusion with regards to permissions being granted for the usage of loudspeakers. So, to clarify the situation, the environment department has been asked to issue a fresh notification.
- Though this notification is yet to be issued, Delhi Police has been designated as an 'authority' and directions have been issued that compliance of noise rules should be made mandatory in the prior permission (for using loudspeakers) and an undertaking may also be obtained.
- The committee also asked DPCC to identify vulnerable areas where noise levels are high and to share this data with the police.

Way Forward:

- A noise monitoring network, similar to that of air quality monitoring stations, will make it easier to identify local hot spots across the city.
- While traffic cannot be reduced, certain interventions can be taken in areas where the levels are exceedingly high.

FOUR NEW CORALS RECORDED FROM INDIAN WATERS

Why in news?

- Scientists have recorded four species of azooxanthellate corals for the first time from Indian waters.
- These new corals were found from the waters of Andaman and Nicobar Islands.

Details:

- All the four groups of corals are from the same family Flabellidae under the Genus Truncatoflabellum (Scleractinian: Flabellidae)

- Truncatoflabellum crissum, T. incrustatum, T. aculeatum, and T. irregulare under the family Flabellidae were previously found from Japan to the Philippines and Australian waters while only T. crassum was reported within the range of Indo-West Pacific distribution including the Gulf of Aden and the Persian Gulf.
- Azooxanthellate corals are a group of hard corals and the four new records are not only solitary but have a highly compressed skeletal structure.
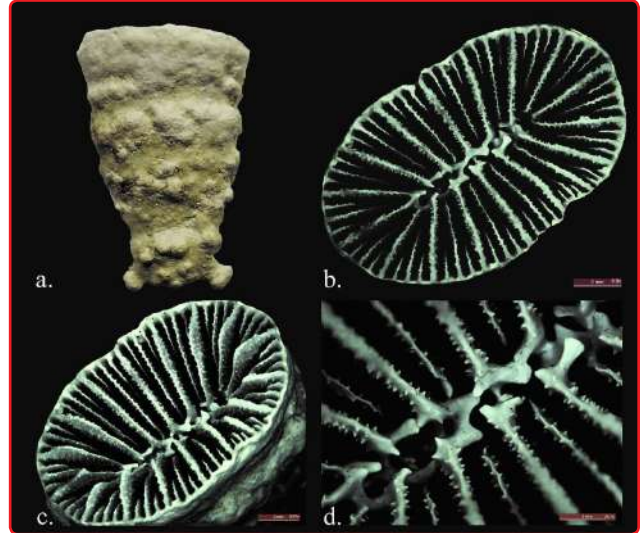
Azooxanthellate corals:

- Azooxanthellate corals are a group of corals that do not contain zooxanthellae and derive nourishment not from the sun but from capturing different forms of plankton.
- These groups of corals are deep-sea representatives, with the majority of species reporting from between 200 m to 1000 m. Their occurrences are also reported from shallow coastal waters.
- Zooxanthellate corals, meanwhile, are restricted to shallow waters.

Non-reef-building:

- The most studies of hard corals in India have been concentrated on reef-building corals while much is not known about non-reef-building corals. These new records enhance knowledge about non-reef-building, solitary corals.

Significance of coral reefs:

- The coral reefs are one of the most productive, sustainable and pristine ecosystems of the world's oceans, especially in shallow coastal waters.
- These habitats contribute several services associated with human needs and existence. Hard corals are the prime and intrinsic part of the coral reef ecosystem.

Corals in India:

- There are about 570 species of hard corals found in India and almost 90% of them are found in the waters surrounding Andaman and Nicobar Islands.

⮕ The pristine and oldest ecosystem of corals share less than 1% of the earth's surface but they provide a home to nearly 25% of marine life.

Way Forward:

⮕ The presently reported four species of solitary stony corals enhance the national database of biological resources of India and also define the expansion of scope to explore these unexplored and non-reef building corals.

LARGEST BACTERIA EVER TO EXIST DISCOVERED

Discovery was a surprise because bacteria should **simply not grow this big**
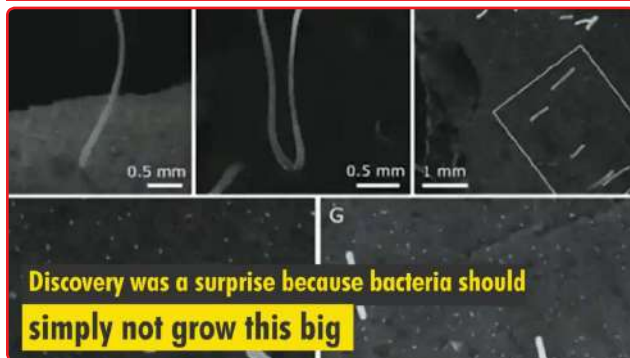
Why in news?

⮕ Recently, scientists have discovered the largest bacterium, a vermicelli-shaped organism in the Caribbean. While most bacteria are microscopic, this unique organism is big enough to be seen by the naked eye.

What are bacteria?

⮕ Bacteria are single-celled organisms that reside nearly everywhere on the planet, vital to its ecosystems and most living things.

⮕ Bacteria are thought to have been the first organisms to inhabit Earth and remain quite simple in structure billions of years later.

⮕ The bodies of people are teeming with bacteria, only a relatively small number of which cause disease.

Characteristic features:

⮕ The organism, named Thiomargarita magnifica, is roughly 50 times larger than all other known giant bacteria and is the first to be visible with the naked eye.

⮕ It's approximately the size of human eyelashes and is nearly a centimeter long.

⮕ A normal bacterial species measures 1-5 micrometers long. This species averages 10,000 micrometers (four-tenths of an inch/1 cm) long, with some twice that length.

⮕ The bacterium has an average cell length greater than 9,000 micrometers.

⮕ Using a range of microscopy techniques, they observed highly polyploid cells with DNA and ribosomes compartmentalized within membranes.

⮕ Single cells of the bacterium, dubbed Candidatus Thiomargarita magnifica, although thin and tubular, stretched more than a centimeter in length.

How it is different from others?

⮕ Scientists have not yet been able to grow it in lab culture, but the researchers say the cell has a structure that's unusual for bacteria.

⮕ One key difference: It has a large central compartment, or vacuole, that allows some cell functions to happen in that controlled environment instead of throughout the cell.

⮕ The researchers said they aren't certain why the bacterium is so large, but hypothesized it may be an adaptation to help it avoid being eaten by smaller organisms.

INDIA FORUM FOR NATURE-BASED SOLUTIONS LAUNCHED

Why in news?

⮕ The National Institute of Urban Affairs' (NIUA) Climate Centre for Cities (NIUA C-Cube), World Resources Institute India (WRI India) and their partners launched India's first national coalition platform for urban nature-based solutions (NbS) at the 11th World Urban Forum in Poland.

Significance:

⮕ Ecosystem-based services and Nature-Based Solutions are fast emerging as cost-effective and sustainable ways to address climate change induced challenges such as heat, urban flooding, air and water pollution and storm surges.

⮕ Along with mitigating the impact of climate change, NbS also helps in providing multiple ecosystem benefits along with addressing various societal challenges including building resilience of the underserved and vulnerable urban communities who are most affected by climate change induced catastrophes.

The India Forum for Nature-based Solutions aims to create a collective of NbS entrepreneurs, government entities and like-minded organisations, to help scale urban nature-based solutions by

- Defining a shared language and by communicating benefits that inform actions at the local level including scaling up of existing NbS interventions.
- Driving investment and strengthening delivery mechanisms through multi-stakeholder coordination.
- Mainstreaming urban ecosystem-based services and nature-based solutions in India through informing policy, plans and project interventions

Cities4Forests initiative:

- 'India Forum for Nature-based Solutions' is led by the National Institute of Urban Affairs' Climate Centre for Cities (NIUA C-Cube) and anchored by World Resources Institute India (WRI Indija) under the Cities4Forests initiative.
- It is supported by Caterpillar Foundation, Department of Environment, Food & Rural Affairs (DEFRA), Govt. of United Kingdom and Norway's International Climate and Forest Initiative (NICFI).

NEW SPIDER FROM THAR DESERT NAMED AFTER MALAYALI ARACHNOLOGIST
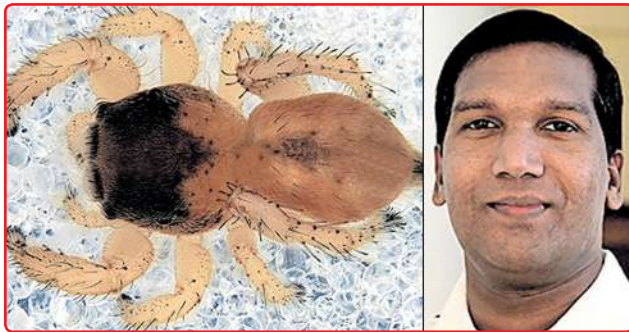
Why in news?

- Recently, a new species of spider discovered from the Thar desert of Rajasthan has been named after a Malayalee arachnologist.
- The new species of jumping spider, Pseudomogrus sudhii, has been named after Sudhikumar A.V.

Characteristics of Pseudomogrus sudhii:

- This species inhabits dry grass blades of the desert. It is the first report of this genus from India.
- So far 35 species of spiders of this genus have been discovered worldwide.
- The spider is only 4-mm long. Dark brown coloured head of male is covered with small white hairs and has black eye region.
- There is a dark mid-longitudinal band traversing the pale-yellow coloured abdomen.
- Head of the female is yellow with black eyes. There are white spots on its light-yellow abdomen.

About Dr. Sudhikumar:

- The spider is named after Dr. Sudhikumar for his contributions to the field of Indian arachnology.

- He has published more than 200 research articles on the Indian spider diversity in various international and national journals.
- He is the author of Keralathile Chilanthikal published by the Kerala Bhasha Institute.
- Under his leadership, researchers from CATE have so far discovered 35 new species of spiders from different geographic locations in Kerala.

UDAIPUR'S 'BIRD VILLAGE' SET TO BE DECLARED WETLAND

Why in news?

- Recognised as the "bird village" following community-driven conservation efforts, Menar in Udaipur district is set to be notified as Rajasthan's new wetland.
- This will pave the way for getting the Ramsar site status for this rural heartland of the Mewar region.

Brahma and Dhandh lakes:

- The two lakes in the village, the Brahma and Dhandh play host to a large number of migratory birds in the winter season every year.
- With the status of wetland, the two lakes will be strengthened for increasing vegetation of aquatic plants and protecting biodiversity.

Fauna:

- More than 150 species of local and migratory birds inhabit the two lakes in the winter season. They include greater flamingo, white-tailed lapwing, pelican, marsh harrier, bar headed goose, common teal, greenshank, pintail, wagtail, green sandpiper and red-wattled lapwing.
- Bird lovers and tourists flock to the village after the arrival of migratory birds from as far as Central Asia, Europe and Mongolia.

Way Forward:

- Environmental activists in the region have high expectations of the declaration of Menar as a Ramsar site under the 1971 Ramsar convention on wetlands of international importance.
- At present, Rajasthan has two wetlands recognised as Ramsar sites – Keoladeo Ghana in Bharatpur district and Sambhar Salt Lake in Jaipur district.

KERALA TO HAVE ITS OWN REGIONAL RED LIST OF BIRDS

Why in news?
➲ Kerala will soon have its own red list of birds.
➲ The Kerala Bird Monitoring Collective led by Kerala Agricultural University and the Bird Count India will conduct the regional red list assessment.

Based on IUCN:
➲ Once it gets ready, Kerala will be the first State to have a region-specific red list of birds.
➲ Assessment will be done on the basis of the International Union for Conservation of Nature (IUCN) guidelines.

IUCN guidelines for preparing the red list:
➲ The IUCN guidelines for preparing the red list have five main criteria. The population size reduction measured over 10 years or three generations is one of the major guidelines.
➲ Geographic range on the basis of extent of occurrence or area of occupancy is another. Small population size and decline; very small or restricted population; and quantitative analysis indicating the probability of extinction in the wild are the other criteria.

Threatened species in Kerala:
➲ According to the global IUCN red list, Kerala has 64 threatened species of birds.
➲ In that, Red-headed vulture and White-rumped vulture are critically endangered. Steppe Eagle, Banasura Chilappan and Nilgirl Chilappan are endangered and 11 species are vulnerable.

Kerala Bird Atlas:
➲ Conducted as a citizen science-driven exercise with participation of over 1,000 volunteers of the bird watching community, the atlas, prepared between 2015 and 2020, provides a solid baseline data about distribution and abundance of various bird species in the State.
➲ The Kerala Bird Atlas accounts for nearly three lakh records of 361 species, including 94 very rare species, 103 rare species, 110 common species, 44 very common species, and 10 most abundant species.

➲ According to the atlas, most of the endemics are concentrated in the Western Ghats while the threatened species are cited mostly along the coast.

ODISHA TO INSTALL SIREN TO CAUTION ELEPHANT MOVEMENT IN FOREST

Why in news?
➲ The Forest Department in Odisha is experimenting with a siren system, which would go off automatically sensing elephant herds crossing the National Highway to reduce human-elephant encounters.
➲ The system has been installed at two places at Ratasingha and Haldihabahal to assess its operability and how seamless it can work to prevent encounters with wild elephants.

How it will work?
➲ The siren system detects elephant herds approaching National Highway by its infrared sensor system.
➲ There is an in-built programme to identify jumbos from their sizes and other attributes.
➲ Once detected, the siren would go off alerting traffic from both sides.

Apiculture programme:
➲ Similarly, the Khadi Village Industries Commission is implementing apiculture programme to keep elephants at bay in neighbouring Angul district.
➲ In cooperation with Athmallik Forest Division, about 100 bee boxes have been set up at border of Laxmipur village in Angul district.
➲ Marauding elephants stray into the village frequently damaging large crop areas. Sometimes, human-elephant encounters result in human casualties.
➲ Elephants are expected to be stung by bees if their boxes are hit. It would drive elephants back. CCTV cameras have been installed to capture reaction of elephants.

CHINA TO SET UP FIRST SOLAR POWER PLANT IN SPACE BY 2028

Why in news?
➲ After successfully returning samples from the Moon, landing, and roving on Mars in their first attempt,

China is set to launch the first solar-powered plant in space.

⮞ The project is already in its initial stages and the agency aims to launch it by 2028.
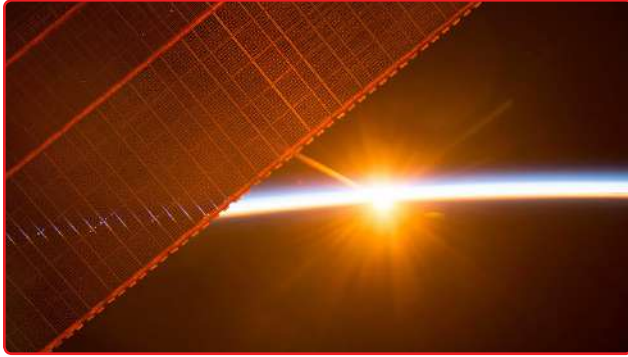
Significance:

⮞ The solar space station aims at converting solar energy into electricity and microwaves.

⮞ They can be used to power the moving satellites in orbit and may direct the energy beams to Earth at fixed locations through a wireless power transmission.

Key Highlights:

⮞ The solar station will be capable of transporting solar energy to Earth.

⮞ The Space Solar Power Station is likely to be a hotspot technology that will be used in the ongoing project of the expedition to Space for power generation.

⮞ The power plant will have a capacity of 10 kilowatts.

Component of OMEGA:

⮞ A look-alike plant is set up at Xidian University by university students and researchers. The tall structure, about 75 meters in height, constitutes five subsystems that look into the solar power arrays.

⮞ The project is a component of OMEGA (Orb-Shape Membrane Energy Gathering Array), a plan for solar energy generation from space that was unveiled in 2014.

⮞ After successfully establishing itself in geostationary orbit, OMEGA's ultimate objective is to store solar energy.

⮞ Its conversion to electrical energy is the following process. The final stage is to send it to Earth.

CABINET APPROVES STRATEGIC PARTNERSHIP AGREEMENT BETWEEN MNRE & IRENA

Why in news?

⮞ Recently, the Union Cabinet was apprised of a Strategic Partnership Agreement signed between the Ministry of New and Renewable Energy (MNRE) and the International Renewable Energy Agency (IRENA).

Aim:

⮞ The aim of the Agreement is to drive ambition, leadership and knowledge on green energy transitions based on renewable energy in India.

⮞ The Agreement will help India's energy transition efforts and will also help the world in combating climate change.

Areas of cooperation:

⮞ The areas of cooperation as envisaged in the Strategic Partnership Agreement will support India in achieving its ambitious target of 500 GW of installed non-fossil fuel electricity capacity by 2030.

⮞ This in-turn will promote Atmanirbhar Bharat.

The salient features of the Agreement include enhanced cooperation in the following areas:

⮞ Facilitating knowledge sharing from India on scaling-up renewable energy and clean energy technologies

⮞ Supporting India's efforts on long term energy planning

⮞ Collaborating to strengthen the innovation climate in India

⮞ Moving towards cost-effective decarbonisation through catalysing development and deployment of green hydrogen.

Way Forward:

⮞ Thus, the Strategic Partnership Agreement will help India's energy transition efforts and will also help the world in combating climate change.

SOCIAL ISSUES

"SHRESHTA" SCHEME

Why in news?

⮞ Union Minister of social Justice and empowerment launched "SHRESHTA"-Scheme for residential education for students in High school in Targeted Areas.

Objective:

⮞ The Scheme for Residential Education for Students in Targeted Areas (SHRESHTA) has been formulated with the objective to provide quality education and opportunities for even the poorest Scheduled Caste students, as per the Constitutional mandate.

⮞ The students from the Scheduled Caste communities, for long been subjects to inequality, were kept out of quality education and a situation that perpetuates the disadvantages carried forward for generations of lack of adequate education.

Access to quality education:

➲ The Governmental efforts to spread educational facilities without discrimination have worked well in achieving near universal access. However, the objective of providing access to quality education that provides a level playing field is still far from reality.

➲ Accordingly, the Department as a new initiative has introduced the scheme for providing quality education in top class private Residential Schools to the meritorious SC students who cannot afford the fee of such schools.

How it will work?

➲ Scheme for Residential Education for Students in High Schools in Targeted Areas (SHRESHTA) provides for high quality education for meritorious but poor SC students in CBSE-affiliated reputed residential schools across the country.

➲ Approximately 3,000 seats are provided each year for admission in class 9th and 11th and the entire cost of the school fee and residential charges are borne by the Department.

Eligibility criteria

➲ The students, belonging to Scheduled Castes, studying in class 8th and 10th in the current academic year are eligible for availing the benefits of scheme are selected through a transparent mechanism through a National Entrance Test for SHRESHTA (NETS), which is conducted by the National Testing Agency (NTA) for admission in class 9th and 11th. Students belonging to marginalized income group within the SC community, whose parental annual income is upto Rs.2.5 Lakh are eligible.

➲ Successful candidates, after following the e-counselling process, are given admission in the school of their choice anywhere in the Country for their academic persuasion.

Financial aspect

➲ The Department shall bear the total cost of the school

fee and hostel charges until completion of their academic up to class 12th. There after the students of the scheme may avail benefits of other schemes of the Department for their higher education.

Way Forward:

➲ The Scheme will be beneficial for SC students those who could not reach for higher quality education. This initiative will bring a drastic change for the betterment of their life.

ONE IN EVERY 36 INFANTS STILL DIES BEFORE FIRST BIRTHDAY IN INDIA: DATA

Why in news?

➲ Despite the decline in infant mortality rate over the past few decades, one in every 36 infants still dies within the first year of their life in India.

What is Infant Mortality Rate (IMR)?

➲ The Infant Mortality Rate (IMR), which is widely accepted as a crude indicator of the overall health scenario of a country or a region, is defined as the infant deaths (less than one year) per thousand live births in a given time period and for a given region.

Key Findings:

➲ According to the new data released by the Registrar General of India, the present level of IMR (28 infant deaths per thousand live births, for the year 2020) is less than one-fourth as compared to 1971 (129 infant deaths per thousand live births).

➲ In the last 10 years, the IMR has witnessed a decline of about 36 per cent and the IMR at the all-India level has declined from 44 to 28 in the last decade.

➲ The corresponding decline in rural areas is 48 to 31, and for urban areas it is from 29 to 19, thereby exhibiting about 35 per cent and 34 per cent decadal decline respectively.

Concerns:

➲ However, despite the decline in the IMR over the last decades, one in every 36 infants die within first year of their life at the national level (irrespective of rural-urban).

➲ In 2020, the maximum IMR has been reported for Madhya Pradesh (43) and the minimum for Mizoram (3).

What is the birth date?

➲ Birth Rate is a crude measure of fertility of a population and is a crucial determinant of population growth. It gives the number of live births per thousand population in a given region and year.

Birth rate:

➲ The birth rate at the all-India level has declined drastically over the last five decades from 36.9 in 1971 to 19.5 in 2020.

➲ The rural-urban differential has also narrowed over these years. However, the birth rate has continued to

be higher in rural areas compared to urban areas in the last five decades.

➲ Birth rate has declined by about 11 per cent in the last decade, from 21.8 in 2011 to 19.5 in 2020. The corresponding decline in rural areas is 23.3 to 21.1 (about 9 per cent decline), and for urban areas it is from 17.6 to 16.1 (about 9 per cent decline).

ASCI FRAMES GUIDELINES TO ASK ADVERTISERS TO BREAK GENDER STEREOTYPES

Why in news?

➲ Recently, the Union Minister for Women and Child Development released the eight new guidelines on harmful gender stereotyping in ads framed by the Advertising Standards Council of India (ASCI).

Background:

➲ It was a follow-up to the regulator's 2021 GenderNext study in partnership with consulting firm Futurebrands that looked at the depiction of women with an aim to guide brands.

➲ The guidelines are a timely intervention, coming only days after the watchdog suspended controversial ads by body spray brand Layer'r Shot that drew wide outrage and were viewed as promoting sexual violence against women.

Key guidelines:

➲ One of the new guidelines says that while advertisements may feature people undertaking gender-stereotypical roles or displaying gender-stereotypical characteristics, they must not suggest that stereotypical roles or characteristics are: always uniquely associated with a particular gender; the only options available to a particular gender; or never carried out or displayed by another gender(s).

The other guidelines include:

➲ While advertisements may feature glamorous and attractive people, they must not suggest that an individual's happiness or emotional well-being depends on conforming to these idealised gender-stereotypical body shapes or physical features.

➲ Ads should not mock people for not conforming to gender stereotypes, their sexual orientation or gender identity, including in a context that is intended to be humorous, hyperbolic or exaggerated.

➲ They should not reinforce unrealistic and undesirable gender ideals or expectations.

➲ An advertisement may not suggest that a person fails to achieve a task specifically because of their gender.

➲ Where an ad features a person with a physique or physical characteristics that do not match an ideal stereotype associated with their gender, it should not imply that their physique or physical characteristics are a significant reason for them not being successful.

➲ Ads should not indulge in the sexual objectification of characters of any gender or depict people in a sexualised and objectified way for the purposes of titillating viewers.

➲ No gender should be encouraged to exert domination or authority over the other(s) by means of overt or implied threats, actual force or through the use of demeaning language or tone. Ads cannot provoke or trivialise violence (physical or emotional), unlawful or anti-social behaviour based on gender.

➲ Additionally, they should not encourage or normalise voyeurism, eve-teasing, stalking, emotional or physical harassment or any similar offences. This does not prevent the ad from showing these depictions as a means to challenge them.

Way Forward:

➲ Gender portrayal is a complex and nuanced issue, and with the new guidelines, ASCI aims to address subtle stereotypical messaging in ads that may go unnoticed.

➲ A recent study by Kantar revealed that 64 per cent of consumers believe advertising reinforces rather than helps eradicate harmful gender stereotypes.

ENDING CHILD LABOUR BY 2025: UPHILL TASK

Why in news?

➲ National Commission for Protection of Child Rights (NCPCR) is celebrating Elimination of Child Labour Week in the honour of World Day Against Child Labour in the 75 places as part of the "75th anniversary

celebrations of India's independence – "Azadi ka Amrit Mahotsav" in different districts starting from 12th June to 20thJune, 2022 as a significance to pay attention to the problem of child labour and to find ways to eradicate it.

SDG:

➲ The UN general assembly in 2015 adopted the Sustainable Development Goals (SDGs), one of which was to eliminate all forms of Child labour by 2025.

➲ On June 12, the World Day Against Child Labour, there should be introspection, on the one hand, and strategic planning, on the other, so that children receive their inalienable rights; a happy childhood, education and justice in India.

Child labour in India:

➲ The present situation of child labour in India is distressing. According to the 2011 census of India, the total number of child labourers in the country is 1.01 crore (10 million).

➲ A research report by the Kailash Satyarthi Children's Foundation has estimated that by 2021, the year when a new census was due, the total child labour population in India would be 81.2 lakh. This figure is expected to decline further to 74.3 lakh by 2025.

➲ The top three states which will together have half of the total child labourers by 2025 in the country will be Uttar Pradesh, Bihar and Maharashtra.

Impact of pandemic:

➲ The pandemic has compounded the existing situation of child labour, thus making it difficult to achieve the global goal of ending child labour.

➲ According to an International Labour Organisation (ILO) report, the Covid-19 crisis threatens to reverse the progress made globally in eliminating child labour.

➲ There would be a rise in child labour, for the first time in the last two decades because of millions of children are being pushed into it. The children in developing economies and populous countries are more vulnerable.

Child labour:

➲ During the pandemic years, the Bachpan Bachao Andolan (BBA), a sister organisation of KSCF founded by Nobel Peace Laureate Kailash Satyarthi in 1980 to liberate and rehabilitate vulnerable and exploited children and prosecute those responsible for the atrocities has rescued more than 10,000 child labourers across 16 States.

➲ According to the National Crimes Records Bureau (NCRB) 2020, the cases registered under the Child Labour (Prohibition & Regulation) Act in 2018, 2019 and 2020 were 464, 772 and 476, respectively.

➲ The top five states recording the maximum number of offences were Telangana (147 cases), Karnataka (54 cases), West Bengal (41 cases), Assam (40 cases) and Andhra Pradesh (37 cases).

Holistic approach:

➲ To formulate a decisive plan for eliminating child labour, urgent measures are required. A holistic approach is needed from legislative measures to a viable rehabilitation strategy, from poverty alleviation and socio-economic development to awareness generation and education.

➲ Alongside, the rescue of child labourers has to become a priority for the law enforcement agencies.

➲ Powerful targeted intervention models, such as Bal Mitra Gram (BMG), a flagship KSCF programme to prevent multiple forms of child exploitation and address such issues of education, Water, Sanitation, Hygiene and Livelihood (WASH) need to be replicated and adopted in villages across the country.

Implementation of laws:

➲ Also, the measures initiated by the government require effective implementation. In 2016, the Child Labour (Prohibition & Regulation) Act, 2016, was amended, thereby making the offence of employing children cognisable and providing stricter punishment for such offences.

➲ It also framed the Child Labour (Prohibition and Regulation) Amendment Central Rules along with the model state action plan enumerating action points to be taken by State Governments.

➲ The union government also implemented the National Child Labour Project (NCLP) scheme for the rehabilitation of child labour, which has been subsumed under Samagara Shiksha Abhiyan (SSA). Eliminating child labour by 2025 remains a colossal task.

NATIONAL INITIATIVE FOR PROMOTION OF UPSKILLING OF NIRMAN WORKERS (NIPUN)

Why in news?

➲ Recently, Ministry of Housing & Urban Affairs launched an innovative project for skill training of construction workers called 'NIPUN' i.e. National Initiative for Promoting Upskilling of Nirman workers.

➲ The project NIPUN is an initiative of the Ministry of Housing & Urban Affairs (MoHUA) under its flagship

scheme of the Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) to train over 1 lakh construction workers, through fresh skilling and upskilling programmes and provides them with work opportunities in foreign countries also.

About Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM):

➲ DAY-NULM is a Centrally Sponsored Scheme, being implemented since 2014-15, with the aim to reduce poverty and vulnerability of urban poor households in the country by enabling them to access self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis.

➲ The National Skill Development Corporation (NSDC), the nodal agency under the Ministry of Skill Development & Entrepreneurship (MSDE), Government of India, will be the Implementation Partner for the project NIPUN.

Implementation:

The project implementation is divided into three parts-

a) training through Recognition of Prior Learning (RPL) at construction sites,

b) training through Fresh Skilling by Plumbing and Infrastructure SSC and

c) International Placement through industries/builders/contractors.

➲ Onsite skill training will be provided to approximately 80,000 construction workers through industry associations under the RPL certification, co-branded with MoHUA, while about 14,000 candidates will receive fresh skilling through plumbing and infrastructure Sector Skill Council (SSC) in trades having promising placement potentials.

➲ The courses are aligned with National Skills Qualifications Framework (NSQF) and will be imparted at accredited and affiliated training centres.

Monitoring under NIPUN:

➲ Under NIPUN, it is envisaged that NSDC will place approximately 12,000 people in foreign countries such as the Kingdom of Saudi Arabia, UAE and other GCC countries.

➲ Project NIPUN will also facilitate and support convergence with related line ministries. Meanwhile, NSDC will be responsible for the overall execution of training, monitoring and candidate tracking.

➲ A project committee with members from both NSDC and MoHUA will be formed under the chairmanship of the Additional Secretary-cum-Mission Director, DAY-NULM to oversee and monitor the project.

Insurance:

➲ It will provide trainees with 'Kaushal Bima', a three-year accidental insurance with coverage of INR 2 lakhs, digital skills such as cashless transactions and the BHIM app, orientation about entrepreneurship, and EPF and BOCW facilities.

Employment generation in construction industry:

➲ The construction industry is poised to become the largest employer by 2022 and needs 45 million additional skilled workers over the next 10 years.

➲ To fulfil this mission, the National Real Estate Development Council (NAREDCO) and the Confederation of Real Estate Developers' Associations of India (CREDAI) have joined Project NIPUN as industry partners and will identify training job roles of aspirational value in the construction sector in collaboration with the SSC.

SCIENCE AND TECHNOLOGY

IISC RESEARCHERS DEVISE STRATEGY TO MAKE SOLID-STATE BATTERIES LAST LONGER

Why in news?

➲ Researchers at the Indian Institute of Science and their collaborators have discovered how next-generation solid-state batteries fail and devised a novel strategy to make them last longer and charge faster.

How solid-state batteries are a promising alternative to conventional lithium-ion batteries?

➲ Conventional lithium-ion batteries the kind that one can find in smartphone or laptop, contain a liquid electrolyte sandwiched between a positively charged electrode (cathode) made of a transition metal (such as iron and cobalt) oxide and a negatively charged electrode (anode) made of graphite.

➲ When the battery is charging and discharging (using up power), lithium ions shuttle between the anode and cathode in opposite directions.

➲ These batteries have a major safety issue the liquid electrolyte can catch fire at high temperatures. Graphite also stores much less charge than metallic lithium.

➲ A promising alternative, therefore, is solid-state batteries that switch out the liquid for a solid ceramic electrolyte and swap graphite with metallic lithium.

➲ Ceramic electrolytes perform even better at higher temperatures, which is especially useful in tropical countries like India.

⊃ Lithium is also lighter and stores more charge than graphite, which can significantly cut down the battery cost.

Issue with the Solid-state batteries

⊃ Solid-state batteries are poised to replace the lithium-ion batteries found in almost every portable electronic device. But on repeated or excessive use, they develop thin filaments called 'dendrites' which can short-circuit the batteries and render them useless.

⊃ The researchers have identified the root cause of this dendrite formation the appearance of microscopic voids in one of the electrodes early on.

Basics of the research

⊃ To investigate this phenomenon, artificially induced dendrite formation by repeatedly charging hundreds of battery cells, slicing out thin sections of the lithium-electrolyte interface, and peering at them under a scanning electron microscope.

⊃ When they looked closely at these sections, the team realised that something was happening long before the dendrites formed microscopic voids were developing in the lithium anode during discharge.

⊃ The team also computed that the currents concentrated at the edges of these microscopic voids were about 10,000 times larger than the average currents across the battery cell, which was likely creating stress on the solid electrolyte and accelerating the dendrite formation.

⊃ To ensure this, the researchers introduced an ultrathin layer of a refractory metal a metal that is resistant to heat and wear between the lithium anode and solid electrolyte.

Key findings

⊃ They collaborated with researchers at Carnegie Mellon University in the US, who carried out computational analysis which clearly showed that the refractory metal layer indeed delayed the growth of microscopic lithium voids.

⊃ Applying extreme pressure that can push lithium against the solid electrolyte can prevent voids and delay dendrite formation, but that may not be practical for everyday applications.

⊃ Other researchers have also proposed the idea of using metals like aluminium that alloy or mix well with lithium at the interface. But over time, this metal layer blends with lithium, becoming indistinguishable, and does not prevent dendrite formation.

Way Forward

⊃ The researchers claim that the findings are a critical step forward in realising practical and commercial solid-state batteries.

⊃ Their strategy can also be extended to other types of batteries that contain metals like sodium, zinc and magnesium.

TWO NEW MISSIONS TO STUDY SURFACE AND MYSTERIOUS DOMES ON MOON
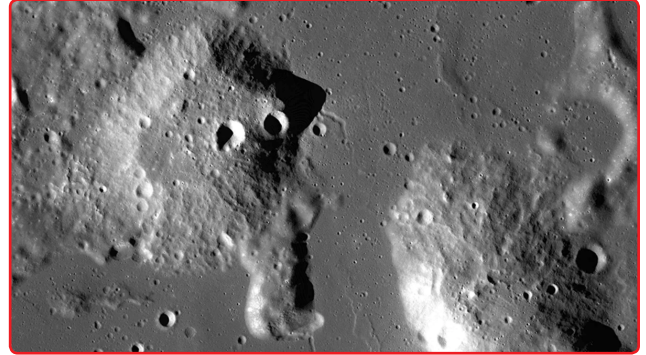
Why in news?

⊃ NASA has selected two new missions to launch to the Moon that will decode the lunar surface and the mysterious Gruithuisen Domes.

Details:

⊃ NASA has selected two missions that will study volcanism and the effects of low gravity and radiation environment on yeast.

⊃ The instruments have been selected under the Payloads and Research Investigations on the Surface of the Moon (PRISM) call.

⊃ The first will study the geologic processes of early planetary bodies that are preserved on the Moon, by investigating a rare form of lunar volcanism.

⊃ The second will study the effects of the Moon's low gravity and radiation environment on yeast, a model organism used to understand DNA damage response and repair.

Lunar Vulkan Imaging and Spectroscopy Explorer (Lunar-VISE) mission

⊃ The Lunar Vulkan Imaging and Spectroscopy Explorer (Lunar-VISE) mission over a course of 10 days will explore the summit of one of the Gruithuisen Domes that are suspected to have been formed by a sticky magma rich in silica, similar in composition to granite.

⊃ The Lunar-VISE mission will give a suite of five instruments, two of which will be mounted on a stationary lander and three mounted on a mobile rover.

Lunar Explorer Instrument for space biology Applications (LEIA)

⊃ The Lunar Explorer Instrument for space biology Applications (LEIA) is a small CubeSat-based device that will provide biological research on the Moon which cannot be simulated or replicated with high fidelity on the Earth or International Space Station by delivering the yeast Saccharomyces cerevisiae to the lunar surface and studying its response to radiation and lunar gravity.

Way Forward

➲ NASA said that the data returned by LEIA, in conjunction with previously existing data from other biological studies, could help scientists answer a decades-old question of how partial gravity and actual deep-space radiation in combination influence biological processes.

CORBEVAX APPROVED BY DCGI AS A HETEROLOGOUS COVID-19 BOOSTER

Why in news?

➲ Hyderabad-based Biological E. Limited (BE)'s COVID-19 vaccine Corbevax has been approved by the Drug Controller General of India (DCGI) as a heterologous COVID-19 booster dose.

What is a heterologous booster?

➲ A heterologous booster is when the third dose is different from the earlier doses.

Details:

➲ It has been approved as a heterologous COVID-19 booster dose to individuals aged 18 years and above after 6 months of administration of primary vaccination (two doses) of Covaxin or Covishield vaccines for restricted use in emergency situations.

➲ Corbevax is the first such vaccine in India to be approved as a heterologous COVID-19 booster.

Clinical trials & outcome:

➲ Recently, BE furnished its clinical trials data to the DCGI, who after a detailed evaluation and deliberations with Subject Experts Committee, granted their approval for administering Corbevax vaccine as a heterologous booster dose to people who have already taken two doses of either Covishield or Covaxin,.

➲ It added that BE's clinical trial data showed that Corbevax booster dose provided significant enhancement in immune response and good safety profile required for an effective booster.

➲ The study indicated that the booster dose of Corbevax increased the neutralising antibody titers in the Covishield or Covaxin groups significantly when compared to placebo.

WHO's EUL:

➲ Biological E hasn't received World Health Organisation's emergency use listing for the jab.

➲ WHO's EUL procedure assesses the quality, safety and efficacy of COVID-19 vaccines and is a prerequisite for COVAX vaccine supply.

➲ It also allows countries to expedite their own regulatory approval to import and administer COVID-19 vaccines.

About Corbevax:

➲ Corbevax is entirely developed and manufactured by Biological E. Limited in association with Texas Children's Hospital and Baylor College of Medicine as a recombinant protein sub-unit vaccine against COVID-19.

CHINA LAUNCHES THREE ASTRONAUTS TO COMPLETE SPACE STATION ASSEMBLY

Why in news?

➲ Recently, China launched a new three-person mission to complete assembly work on its permanent orbiting space station.

➲ Their spaceship blasted off from the Jiuquan Satellite Launch Center on the edge of the Gobi Desert atop the Long March 2F rocket.

Agenda:

➲ The Shenzhou 14 crew will spend six months on the Tiangong station, during which they will oversee the addition of two laboratory modules to join the main Tianhe living space that was launched in April 2021.

➲ The completed station will be similar to the Soviet Mir station that orbited Earth from the 1980s until 2001.

Tiangong station:

➲ Tiangong, which means "heavenly palace", is expected to become fully operational by the end of the year.

➲ The Shenzhou-14 crew is led by Air Force pilot Chen Dong. The three-person crew's main challenge will be connecting the station's two lab modules to the main body.

China's space program:

➲ China's space program launched its first astronaut into orbit in 2003, making it only the third country to

do so on its own after the former Soviet Union and the U.S.

‚ It has landed robot rovers on the moon and placed one on Mars 2021. China has also returned lunar samples and officials have discussed a possible crewed mission to the moon.

'LIPSTICK' PLANT REDISCOVERED IN ARUNACHAL AFTER 100 YEARS

Why in news?

‚ Researchers at the Botanical Survey of India (BSI) have rediscovered a rare plant, which is sometimes called the 'Indian lipstick plant', from remote Anjaw district in Arunachal Pradesh after more than a century.

Background:

‚ The plant (Aeschynanthus monetaria Dunn) was first identified by British botanist Stephen Troyte Dunn in 1912, based on the plant samples gathered from Arunachal Pradesh by another English botanist, Isaac Henry Burkill.

‚ Due to the appearance of tubular red corolla, some of the species under the genus Aeschynanthus are called lipstick plants.

Key Highlights:

‚ A review of the relevant documents as well as a critical study of the fresh specimens confirmed that the specimens were Aeschynanthus monetaria, which had never been obtained from India since Burkill in 1912.

‚ The genus name Aeschynanthus is derived from the Greek aischyne or aischyn, which means shame or to feel embarrassed respectively, and anthos, which means flower.

Characteristics of Aeschynanthus monetaria Dunn:

‚ Aeschynanthus monetaria Dunn is morphologically unique and distinct among all the Aeschynanthus species known from India by its fleshy orbicular leaves with a greenish upper surface and purplish-green lower surface. The specific epithet 'monetaria' means 'mint-like', alluding to the appearance of its leaves.

‚ The plant grows in moist and evergreen forests, at elevations ranging from 543 to 1134 m. The flowering and fruiting time is between October and January.

‚ The species has been provisionally assessed here as 'endangered', following the guidelines of the International Union for Conservation of Nature (IUCN), the global authority on the status of the natural world and the measures needed to safeguard it.

Threats:

‚ Landslides are frequent in Anjaw district of Arunachal Pradesh. Developmental activities such as broadening of roads, construction of schools, new settlements and markets, and jhum cultivation are some of the major threats to this species in Arunachal Pradesh.

IIT MADRAS DEVELOPS ROBOT TO CLEAN SEPTIC TANKS WITHOUT HUMAN INTERVENTION

Why in news?

‚ Recently, researchers at the Indian Institute of Technology (IIT), Madras have developed a robot to clean septic tanks without human intervention.

HomoSEP:

‚ Named HomoSEP, ten units are planned to be deployed across Tamil Nadu and the researchers are in touch with sanitation workers to identify the locations, officials said.

‚ Gujarat and Maharashtra are being considered for the deployment of the robots that have been developed with an aim to eliminate manual scavenging in the next phase.

How it will a life saver for manual scavengers?

‚ The septic tank is a poisonous environment, filled with semi-solid and semi-fluid human faecal material that make up about two-thirds of the tank.

‚ Hundreds of deaths are reported every year across India, due to manual scavenging in septic tanks despite bans and prohibitory orders.

‚ The HomoSEP can homogenise the hard sludge in septic tanks through custom-developed rotary blade mechanism and pump the tank slurry using an integrated suction mechanism.

Stakeholders:

➲ HomoSEP was first developed as a final year Masters' project and showcased at the IIT Madras Carbon Zerp Challenge 2019, after receiving seed support from IIT Madras' Socially Relevant Projects initiative.

➲ GAIL (India) further supported product development and CapGemini supported efforts towards miniaturisation and portability of the robot, through their CSR initiatives.

SATELLITE CONSTELLATION TO TRACK CYCLONES EVERY HOUR

Why in news?

➲ As climate change leads to more intense and dangerous extreme events, NASA is set to launch the first two of a series of six satellites to study the formation and development of tropical cyclones.

➲ These satellites will observe these events almost every hour about four to six times more often than is possible with current satellites.

TROPICS Mission:

➲ The two satellites will be launched under the Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) mission.

➲ NASA aims to spread the six satellites across three orbital planes to cover more of the planet more frequently.

➲ The satellites will not be the same as the NOAA-20 satellite that revisits a storm once every four to six hours.

Key features:

➲ The Tropics constellation is aimed at providing scientists with more frequent updates, complementing the data collected by existing low-Earth orbit weather satellites and allowing scientists to see each storm from beginning to end. The satellites will be placed at an angle near 30 degrees above the equator in different low Earth orbits.

➲ This will maximize the amount of time the satellites spend passing over the part of Earth where most tropical cyclones form a horizontal band stretching from about the Mid-Atlantic region of the United States to the southern coast of Australia, roughly between 38 degrees north and south latitudes.

➲ The satellites will be equipped with a microwave radiometer to measure atmospheric emissions and frequencies, beaming back information about the temperature, precipitation, moisture, and other characteristics of the storm and surrounding atmosphere. The satellite will therefore be able to develop three-dimensional images of the event.

Way Forward:

➲ When the constellation of six satellites is finally in orbit, it will join the TROPICS Pathfinder satellite, a proof-of-concept CubeSat that launched in June of 2021 and has been capturing images of several tropical cyclones, such as Hurricane Ida over the United States, Cyclone Batsirai over Madagascar, and Super Typhoon Mindulle over eastern Japan.

SCIENTISTS CONDEMN PROJECT TO STUDY 'RACIAL PURITY' OF INDIAN POPULATION

Why in news?

➲ Over a 100 leading biologists, historians, anthropologists and intellectuals have written a joint letter to the Ministry of Culture protesting its purported plans to fund a project to study "genetic similarities and differences in the DNA (genetic) profiles of Indian population groups."

What was the project?

➲ The plan was to procure the latest DNA sequencing equipment to "establishing the genetic history and trace the purity of races in India".

➲ The project aimed to study the "process of genetic mutation and mixing in Indian population over the last 10,000 years."

Response of Ministry of Culture:

➲ The Ministry of Culture said the project wasn't related to establishing the "genetic history of races."

Race & Purity:

➲ The term "race" was invented as part of the effort to classify humans into distinct groups based on physical features such as bone structure and skin colour, and social characteristics such as faith and religion. It was assumed that the groups were

somehow "natural", or that they had a meaningful biological basis.

⮞ However, in terms of the genes that make up individual biological inheritance, all human beings, irrespective of where they come from, share the same "gene pool." Most gene-based distinctions occur within so-called races, not between races and subsequent studies have only reinforced the strength of that conclusion, their letter notes.

⮞ The notion of "purity," in addition to being meaningless, carries with it the sense of some groups being "less pure or more pure" than others.

⮞ Human history is replete with examples of horrible injustice , denial of benefits or even persecution meted out to "less pure" groups by "more pure" groups. Racial stereotyping of humans has been discarded, and there should be no attempt to revive the concept in India.

Conclusion:

⮞ For several decades human population geneticists and anthropologists working in various Indian institutions, including the Anthropological Survey of India under the Ministry of Culture, have undertaken detailed DNA analyses of individuals collected from various communities of India, including tribal communities, and have shown that nearly every community today is an admixed community of several ancestral communities whose identities can at best be guessed, but not with great certainty.

⮞ But if it touches on questions of "racial purity," one guaranteed outcome will be the exacerbation of disharmony among Indians".

RUSSIA DELIVERS MORE EFFICIENT NUCLEAR FUEL FOR KUDANKULAM

Why in news?

⮞ Rosatom State Corporation of Russia has supplied the first batches of more reliable and cost-efficient nuclear fuel over the existing one, the TVS-2M nuclear fuel, to India for the Units 1 and 2 of Kudankulam Nuclear Power Plant (KNPP).

TVS-2M nuclear fuel:

⮞ Once the new TVS-2 M fuel is used in the next refuelling, the reactor will start operations with the 18-month fuel cycle.

⮞ It means the reactor, which has to be stopped for every 12 months for removing the spent fuel and inserting the fresh fuel bundles and allied maintenance, will have to be stopped for every 18 months.

How TVS-2M nuclear fuel is more advantageous?

⮞ Compared to the current fuel model, the TVS-2M fuel assemblies have a number of advantages making them more reliable and cost-efficient.

⮞ Firstly, it is the rigidity of a bundle. Because of the welded frame, the fuel assemblies in the reactor core retain their geometry. The spacer grids protect the fuel rod cladding from fretting wear and the additional spacer grid makes the fuel assemblies more vibration-resistant.

⮞ Secondly, the new fuel has increased uranium capacity, one TVS-2M assembly contains 7.6% more fuel material as compared to the earlier fuel bundles.

⮞ In addition, the special feature of the Kudankulam fuel in particular is the new generation anti-debris filter protecting bundles from debris damage, which may be caused by small-sized objects in the reactor core.

⮞ Operation in longer fuel cycles also enhances the economic efficiency of a plant: As reactors have to undergo stoppage and refueling less frequently, the power units can produce more electricity.

⮞ Besides, the plant needs to buy less fuel, and as the result, has to deal with smaller amounts of spent fuel.

About Kudankulam Nuclear Power Plant (KNPP):

⮞ Russia is building the KNPP under an Inter-Governmental Agreement (IGA) of 1988 and follow on agreements in 1998 and 2008.

⮞ The first stage, consisting of power units No. 1 and No. 2, was commissioned in 2013 and 2017, respectively. Power units No. 3, 4 and No. 5, 6 are currently under construction.

INDIA-RUSSIA DEAL ON RADIO EQUIPMENT

Why in news?

⮞ Recently, Radio technical Systems (RTS) of Russia has signed a large-scale contract with the Airports Authority of India (AAI) for the supply of radio equipment.

Key Highlights:

➲ The Russian company will manufacture 34 sets of instrument landing system (ILS) 734 for the modernisation of 24 airports in India.

➲ The contract comes amid the war in Ukraine and pressure from the West on India to diversify its dependence for defence needs.

Way Forward:

➲ The contract between RTS and AAI has become a breakthrough for Russian business in the highly competitive market of ground-based radio equipment in India.

➲ There is no doubt that the successful execution of the contract will open up new opportunities for the implementation of joint projects to modernise Indian airport infrastructure.

SCIENTISTS CREATE TIME CRYSTALS
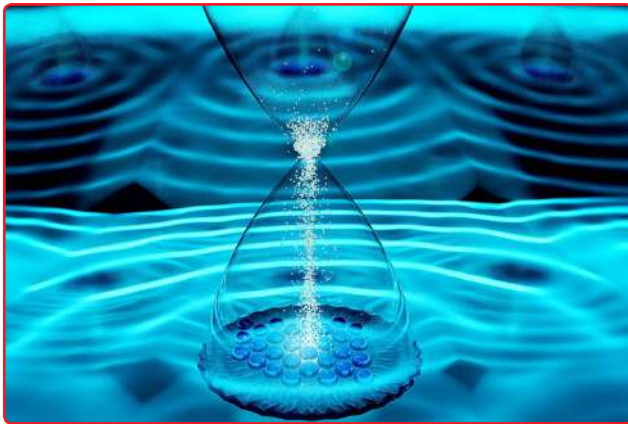
Why in news?

➲ Scientists have for the first time created a two-body system in an experiment that could bend the laws of physics.

➲ Being called time crystals, this new phase of matter has been created after scientists witnessed their first interaction and were long believed to be impossible.

Details:

➲ A team of researchers from Lancaster University, Royal Holloway London, Landau Institute, and Aalto University in Helsinki observed the time crystals by using Helium-3 which is a rare isotope of helium with one missing neutron.

➲ They observed it for a record amount of time, about 1,000 seconds before it decayed.

What is time crystal?

➲ A time crystal is a macroscopic quantum system in periodic motion in its ground state.

➲ They have now proved that this new phase of matter can not only be created but can also be used for useful purposes, including in quantum computing.

➲ Time crystals are different from standard crystal-like metals or rocks, which are composed of atoms arranged in a regularly repeating pattern in space.

➲ Nobel Laureate Frank Wilczek was the first to theorize time crystals in 2012 and identified them in 2016 as exhibiting the bizarre property of being in constant, repeating motion in time despite no external input.

➲ The atoms in time crystal are constantly oscillating, spinning, or moving first in one direction, and then the other.

Mechanism:

➲ They cooled superfluid helium-3 to about one ten-thousandth of a degree from absolute zero and created two time crystals inside the superfluid, and brought them to touch.

➲ They then saw the two time crystals interacting as described by quantum physics.

Way Forward:

➲ The new matter could prove useful in developing quantum computers with have much faster processing rates and can use this new phase of matter by linking myriad time crystals, each one designed to act as a qubit.

INTENSIFIED DIARRHOEA CONTROL FORTNIGHT – 2022

Why in news?

➲ Recently, Ministry of Health and Family Welfare launched the Intensified Diarrhoea Control Fortnight (IDCF)-2022.

➲ IDCF programme is being implemented from 13th June to 27th June, 2022 in the States/UTs.

Aim:

➲ The goal of IDCF is to attain zero child deaths due to childhood diarrhoea.

Child mortality rate in India:

➲ According to the latest report of SRS-2019, child mortality rate in the country has come down considerably since 2014.

➲ This rate has come down from 45 per 1000 live births in 2014 to 35 per 1000 live births in 2019. But even today, diseases related to diarrhoea continue to be a major cause of death in children under the age of five.

➲ According to the latest survey (NFHS-5) conducted by the Ministry, only 60.6% children under the age of five

with diarrhoea were given ORS and only 30.5% were given zinc. This means that there is lack of awareness among mothers.

About IDFC:

� Intensive Diarrhoea Control Fortnight (IDCF) is being organized since 2014 with an objective to 'bringing the number of deaths due to diarrhoea in childhood to zero'.

� In view of the high prevalence of diarrhoea, this fortnight is organized especially during summer/ monsoon so that preventive measures can be taken.

Activities:

� IDCF consists of a set of activities to be implemented in an intensified manner for prevention and control of deaths due to dehydration from diarrhoea across all States & UTs.

� These activities mainly include intensification of advocacy & awareness generation activities for diarrhoea management, strengthening service provision for diarrhoea case management, establishment of ORS-Zinc corners, prepositioning of ORS by ASHA in households with under-five children and awareness generation activities for hygiene and sanitation.

CABINET APPROVES MOA FOR ESTABLISHMENT OF BIMSTEC TECHNOLOGY TRANSFER CENTRE

Why in news?

� The Union Cabinet has approved a Memorandum of Association (MoA) by India for establishment of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Technology Transfer Facility (TTF).

�con The MoA was signed by the BIMSTEC member countries at the 5th BIMSTEC Summit held at Colombo, Sri Lanka in March, 2022.

Objective:

� The main objectives of the BIMSTEC TTF are to coordinate, facilitate and strengthen cooperation in technology transfer among the BIMSTEC Member States by promoting the transfer of technologies, sharing of experiences and capacity building.

About Technology Transfer Facility (TTF):

�con The TTF shall facilitate transfer of technologies among the BIMSTEC Member States, amongst other things, in the following priority areas Biotechnology, Nanotechnology, Information and Communication Technology, Space technology applications, Agricultural technology, Food processing technology, Pharmaceutical technology automation, New and renewable energy technology automation, New and Renewable energy technology, Oceanography, Nuclear Technology Applications, E-waste and solid waste management technology, Health Technologies, Technologies pertinent to Disaster Risk Reduction and Climate Change Adaptation.

➜ The TTF shall have a Governing Board and the overall control of activities of the TTF shall be vested in the Governing Board. The Governing Board shall consist of one nominee from each Member State.

The expected outcomes of the BIMSTEC TTF are:

➜ Databank of technologies available in BIMSTEC Countries.

➜ Repository of information on good practices in the areas of technology transfer management, standards, accreditation, metrology, testing and calibration facilities,

➜ Capacity building, sharing of experiences and good practices in development, and

➜ Transfer and use of technologies among BIMSTEC countries.

CABINET APPROVES MEGA 5G AUCTION
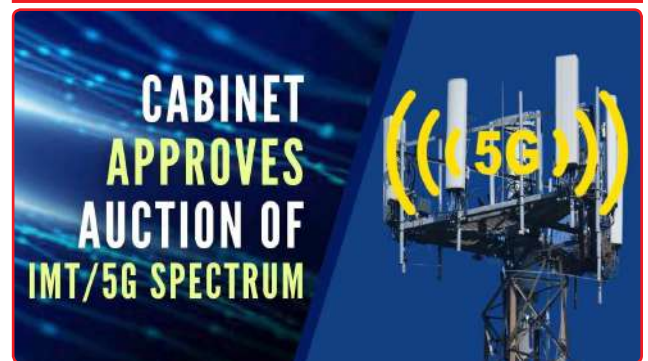
Why in news?

➜ Recently, the Union Cabinet has approved the auction of airwaves capable of offering fifth generation, or 5G, telecom services, including ultra high-speed Internet, and gave its nod for setting up of captive 5G networks by big tech firms.

➜ The auction of over 72 GHz of the spectrum will be held by July-end.

Reserve Prices:

➜ The Cabinet has approved 5G auctions at reserve prices recommended by the sector regulator, Telecom Regulatory Authority of India (TRAI).

Offer to Big Tech Firms:

➲ While the 5G spectrum in nine frequency bands will be auctioned to telecom operators such as Bharti Airtel and Reliance Jio, the big tech firms for the time being will be allowed to take the 5G spectrum for their captive non-public network, on lease from the telecom companies.

➲ The direct allocation to the big tech companies will follow a demand study and sector regulator TRAI's recommendation on aspects such as pricing and modalities of such allocation.

➲ Big tech companies like Google have been seeking direct allocation of spectrum for applications such as machine-to-machine communications, IoT and AI, while telecom companies have been opposing direct allocation of 5G spectrum to them saying it will distort the level playing field and rob the government of revenues.

Possible pitfalls:

➲ The 5G roll out will require crucial infrastructural change in the communication system.

➲ Consumers will be under a financial liability to upgrade their cellular technology for better transition from 4G to 5G.

➲ Lack of capital adequacy with telcos such as Bharti Airtel and Vodafone Idea can be considered as a challenge to rapid 5G roll out.

Major govt announcements on 5G spectrum:

➲ According to DoT, the 5G services will initially be introduced in 13 major cities in India including Ahmedabad, Bengaluru, Chandigarh, Chennai, Delhi, Gandhinagar, Gurugram, Jamnagar, Hyderabad, Pune, Lucknow, Mumbai, and Kolkata.

➲ The government has also announced that a total of 72GHz of spectrum will be auctioned across all frequency bands including 600 MHz, 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 3300 MHz, and 26 GHz.

Way Forward:

➲ Telecom industry, being a major part of the Indian economy, is expected to contribute 8% to Indian GDP in 2022.

➲ While the 5G roll out in India is being considered the beginning of a new era. It is also a step forward to PM Modi's Digital India dream.

NEWLY DEVELOPED ULTRATHIN HETEROPROTEIN FILM: BETTER ALTERNATIVE TO ISOLATED PROTEIN FILMS

Why in news?

➲ Recently, researchers from the Institute of Advanced Study in Science and Technology (IASST), Guwahati, has successfully developed ultrathin monolayer protein films.

Details:

➲ The protein films consist of two globular proteins: bovine serum albumin (BSA) and lysozyme (Lys).

➲ They used the technique called using Langmuir-Blodgett (LB) technique which gives the films thickness in the order of nanometer.

Background:

➲ Scientists have developed ultra-thin heteroprotein films with excellent thermal, mechanical and pH stability which can pave the way for expanding applications of thin films in biomedical and food packaging industries.

➲ These films are much thinner as compared to the other protein or plastic films. They are soft and thin and have the advantage of being more flexible than the other films.

➲ In the recent past, several modifications of these protein films with the help of suitable heteroprotein complexes were reported by different research groups. These complexes were usually developed from bulk solutions.

Mechanism:

➲ They explored the different structures and morphologies of this complex films at variable pH conditions to explore its stability and related properties.

➲ The complex formation between the two proteins occurred at a unique pH of 9.2 as a result of an electrostatic attraction along with hydrophobic interactions.

➲ This monolayer complex was formed at the air-water interface, which was later transferred to the silicon substrates at a surface pressure of 18 mN/m for further study.

➲ It was shown that the monolayers at the air-water interface can hold its intrinsic structure for a sufficiently longer period of time due to the complexation forming a highly stable film.

Future prospects:

➲ Films of such protein complex of BSA and Lys can be useful for fabricating highly stable biodegradable thin films of different protein complexes for expanding its applications in the area of thin-film technology.

➲ Diverse physicochemical methods such as parameter alteration or incorporation of different fatty acids or polyol moieties (glycerol, starch, gelatin, etc.) into this protein complex can make the film free standing for diverse applications.

GLOBAL ELECTRIC MOBILITY READINESS INDEX 2022

Why in news?

➲ Recently, the Global Electric Mobility Readiness Index (GEMRIX 2022) was released.

GEMRIX

- Management consulting firm Arthur D. Little's GEMRIX focuses on four major parameters to gauge EV adoption trend—markets, customers, infrastructure and governments.
- GEMRIX has been calculated for 15 countries of which India holds the 11th rank in terms of market readiness for EV adoption.
- The Index is designed to compare the market conditions for EV and internal combustion engine (ICE)-driven vehicles.
- An EV readiness score of 100 means that in a given country, it is equally beneficial to buy and operate an electric vehicle as one with an internal combustion engine.
- The overall usage of electric vehicle (EV) has been on a rise over the last two years across the globe, says the GEMRIX 2022 report.

Key Findings:

- Norway has emerged as the electric vehicle (EV) adoption leader across the globe.
- Norway has a Global Benchmark score of 115, indicating that EVs are emerging as the popular choice for mobility among citizens in that country.
- This is followed by three other distinct groups of countries comprises 'Ambitious Followers' China (Score 83), Germany (76), the UK (74) and Singapore (74), which possess all prerequisites for EV mobility and where EVs are on the verge of becoming mainstream.
- The starters like India, which has a score of 31 face major challenges in costs and infrastructure.

Findings on Starter countries like India:

- In India, with 40 different types of vehicles on offer, customers enjoy a good variety. However, this is mainly in the two- and three-wheeler space while private cars in India do not have a significant share of the EV market yet.
- China in contrast offers more than 100 different models with around half of those being passenger cars.
- In Starter countries, competition grew significantly, driving prices down and pushing up quality.
- Electric two- and three-wheeler sales grew at 132 per cent and 102 per cent, respectively, in the financial year 2022, reaching large scale production, leading to sales prices decline.
- Combined with the recent increase in oil prices, the total cost of operating electric two- and three-wheelers is much lower than that of other vehicles.

Way Forward:

- EVs are here to stay. However, despite the mature globalisation of the automotive industry, markets and their requirements differ significantly around the world.

- These differences must be acknowledged to successfully implement a 'once-in-a-century' disruption like the change from fossil fuel energy to electric energy, from molecules to electrons.
- At the same time, effective government policies as a response to climate change and air pollution must look at promoting EV adoption at a faster pace.

BIS DEVELOPS AN INDIAN STANDARD FOR NON-ELECTRIC COOLING CABINET MADE OF CLAY'

Why in news?

- Recently, the Bureau of Indian Standards (BIS), has developed an Indian Standard, IS 17693: 2022 for 'non-electric cooling cabinet made of clay'.

Background:

- 'Mitticool Refrigerator' was exhibited at the 4th batch of Innovations Scholars In-residence Programme held at Rashtrapati Bhawan (2017) in partnership with the National Innovation Foundation (NIF).
- Refrigeration is a food storage technique that prevents bacterial growth whereby increasing its shelf life and making it fit for consumption.

Innovator:

- Named as 'Mitticool refrigerator', Mansukh Bhai Prajapati from Gujarat is the innovator behind the refrigerator which projects an eco-friendly technology.
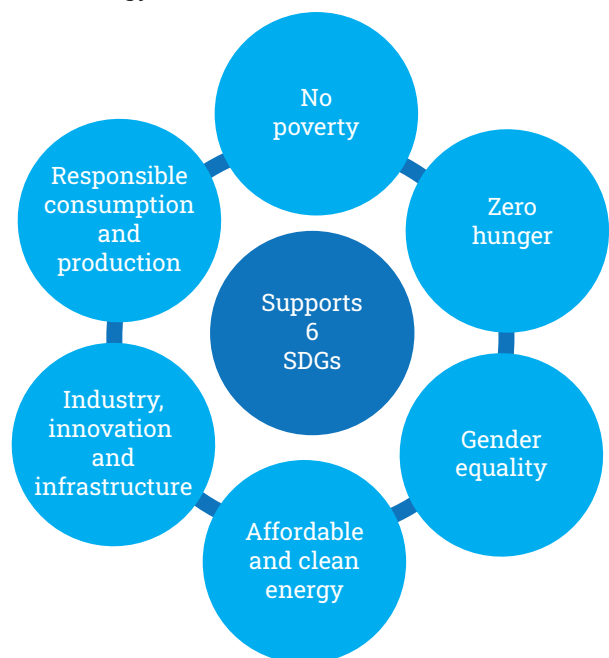
Supports 6 SDGs:

- BIS standard specifies the construction and performance requirements of a cooling cabinet made out of clay, which operates on the principle of evaporative cooling.

- These cabinets may be used to store perishable foodstuff without the need of electricity.
- This standard helps BIS in fulfilling 6 out of 17 United Nations Sustainable Development Goals (SDGs) like No poverty, Zero hunger, Gender equality, Affordable and clean energy, Industry, innovation, and infrastructure, and Responsible consumption and production.

Significance:

- It is a natural refrigerator made primarily from clay to store vegetables, fruits, milk, and also for cooling water.
- It provides natural coolness to foodstuffs stored in it without requiring any electricity. Fruits, vegetables, and milk can be stored reasonably fresh without deteriorating their quality.
- It is playing an influential role in reviving the pottery culture, tradition, and heritage; connecting people back to roots in better healthier ways; promoting sustainable consumption; economically empowering the indigent community; working towards green and cool earth, economic development and employment generation; and finally contributing towards rural women upliftment and making them financially independent.

CHINA FINDS SIGNS OF WATER IN MOON'S 'OCEAN OF STORMS'

Why in news?

- Recently, Chinese scientists have found signs of water in samples retrieved by China from a lava plain on the moon, bringing them closer to understanding its origin there; a crucial question for future lunar exploration.

Observations made:

- The scientists had analysed remnants of solidified lava retrieved by an uncrewed Chinese mission from the plain known as the 'Ocean of Storms' and found evidence of water in the form of hydroxyl encased in a crystalline mineral known as apatite.
- Hydroxyl, comprising a single hydrogen atom and an oxygen atom versus two hydrogen to one oxygen in a water molecule, was also found in samples retrieved by NASA decades ago.

- It was widely held that most of the water on the moon was the result of chemical processes triggered by the bombardment of charged particles from the sun on the lunar surface.
- The source of hydroxyl in minerals such as apatite is very likely indigenous.

Indigenous sources:

- The hydroxyl contents in foreign materials produced by the impact processes are probably negligible.
- The Chinese samples suggest that little or none of the hydroxyl in them was from extraneous sources.

Chang'e-5 mission:

- China's Chang'e-5 mission, named after the mythical Chinese goddess of the moon, brought back 1,731 grammes of samples in December 2020 after retrieving the soil and rock from a previously unvisited part of the Oceanus Procellarum plain.

What's next?

- China is expected to launch more uncrewed lunar missions in coming years, with the study of water one of the objectives.
- The presence of water on the moon could shed more light on the evolution of the solar system. It could also point the way to in-situ water resources vital to any long-term human habitation.

EL SALVADOR'S BITCOIN BET

Why in news?

- The crash in the price of Bitcoin and other cryptocurrencies has put El Salvador's government in trouble.
- The country, led by President Nayib Bukele who is a self-proclaimed fan of cryptocurrencies, had adopted Bitcoin as an official currency in September 2021.
- The crash in the price of Bitcoin has raised concerns over the government's ability to repay its debt.

What is the problem in El Salvador?

- The crash in the price of Bitcoin from around $69,000 in November 2021 to around $20,000 in June 2022 has caused losses to investors around the world. According to some estimates, the average cryptocurrency investor is deep in losses after the significant correction in the prices of cryptocurrencies.

◐ El Salvador's President has been using taxpayer's money to bet on Bitcoin. It is said that the El Salvador government's investment of over $100 million in Bitcoin has lost more than half of its value till date due to the crash.

Why did El Salvador adopt Bitcoin as an official currency?

◐ In 2001, El Salvador had adopted the U.S. dollar as its official currency. After Bitcoin was adopted as an official currency in September 2021, both Bitcoin and the U.S. dollar have been used as official currencies. The El Salvador government has been trying to encourage citizens to primarily use Bitcoin for their daily transactions.

◐ It even came out with a payments wallet named Chivo which gave out for free Bitcoin worth $30 initially to encourage people to use Bitcoin in transactions.

Why it adopted Bitcoin?

◐ Analysts believe that the decision to adopt Bitcoin as an official currency may have to do with the El Salvador government's inability to borrow in U.S. dollars.

◐ El Salvador's public debt has risen to over 100% of gross domestic product and its recent attempt to borrow $1 billion using bonds backed by Bitcoin failed. The government's bonds are trading at a steep discount and are classified as junk by investors.

◐ It has already had to rely on financial help from the International Monetary Fund (IMF) and the World Bank to meet his government's spending needs. The IMF had also opposed its decision to make Bitcoin an official currency.

◐ Bitcoin offers a chance for the El Salvador government to cut down its reliance on the U.S. dollar to fund its spending. Greater adoption of Bitcoin in El Salvador will allow the government to tax and spend in Bitcoins instead of U.S. dollars.

◐ This maybe why the government is making various attempts to encourage the use of Bitcoin over U.S. dollars by its citizens.

How well has Bitcoin done in El Salvador?

◐ Most citizens of El Salvador have been reluctant to adopt Bitcoin as a medium of exchange, that is, as money. Many citizens, it is claimed, registered on the payments wallet Chivo that was pushed by the government simply to sell off their free Bitcoin in exchange for $30.

◐ The acceptance of cryptocurrencies in general has been miniscule across the globe. This has been the case despite the fact that the supply of cryptocurrencies is limited by design, which could potentially help them maintain or increase in value over time.

◐ One big reason for the low acceptance of cryptocurrencies has been their extreme price volatility, making them an unreliable store of value.

People in general are hesitant to accept something as money if they are not fairly sure about its likely value in the future.

INDIA'S LATEST COMMUNICATION SATELLITE GSAT-24 SUCCESSFULLY LAUNCHED

Why in news?

◐ Recently, the GSAT-24 satellite, built by ISRO for NewSpace India Limited (NSIL), was successfully launched.

◐ GSAT-24 was launched on-board Ariane-V VA257 flight from the Guiana Space Centre, Europe's spaceport in Kourou in French Guiana (South America).

About GSAT-24:

◐ GSAT-24 is a 24-Ku band communication satellite weighing 4180 kg with pan-India coverage for meeting DTH application needs.

◐ It was the first "demand driven" communication satellite mission undertaken by NSIL post space sector reforms.

◐ NSIL, a Government of India company under the Department of Space, has leased the entire satellite capacity to Tata Play.

'Measat-3d':

◐ During its journey to space, India's GSAT-24 was not alone, atop the European Ariane 5 rocket.

◐ It was accompanied by a co-passenger satellite dubbed 'Measat-3d', which is meant to meet the communication needs of Malaysia.

AEROSOL STUDY SHOWS HOW SARS-COV-2 SPREADS

Why in news?

◐ The transmission of SARS-CoV-2 through the air has been studied at various places around the world.

◐ Researchers led by those at CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad, and Tata institute for Genetics and Society (TIGS), Bengaluru carried out a study to get further insight into the transmission characteristics of the novel coronavirus in air in hospital settings and in residential areas and public places.
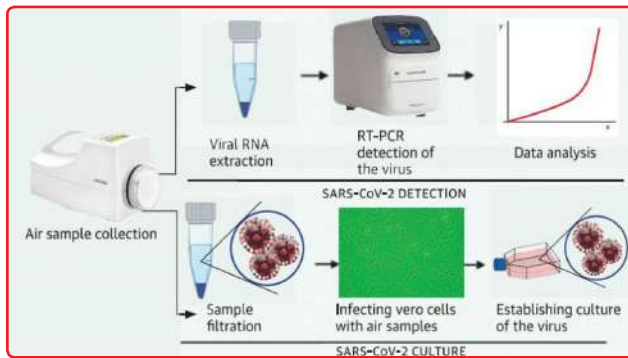
⮞ The study underline the importance of masks in comparison with mere physical distancing.

Mechanism involved:

⮞ A machine, which sucks in air, similar to a vacuum cleaner, fitted with a filter on which a gel was spread was taken and worked in the target areas.

⮞ After running the machine for long durations stretching to an hour or two, samples collected from the filter were either used to carry out an RT-PCR test to determine the presence of the virus, or were cultured by infecting vero cells in the lab. The latter was done to find out if the collected virus samples were infectious.

Observations:

⮞ The researchers saw the virus in samples collected from COVID-19 wards. Outside, in the corridors and near the hospitals they did not detect it, implying a dilution or removal of the virus.

⮞ Having separate COVID-19 wards and negative pressure rooms are good, because infection does not spread very far.

⮞ Negative pressure rooms are isolation wards in hospitals to keep persons with infectious diseases.

Not mere proximity:

⮞ The researchers detected the virus even 20-25 feet away from infected persons.

⮞ Samples taken from air from toilets also showed presence of the virus. The group detected the virus when they sampled the air in the toilet even two hours after an infected person had used it.

⮞ The study implies that when using public toilets, masks should not be removed, even if no one is present.

⮞ The virus can hang in the air for close to two hours after an infected person has used the toilet. It is very risky if someone enters the toilet, sees no one there and removes the mask.

Sterilising rooms:

⮞ The study further observes that in a closed space, physical distancing alone is not helpful, because the virus borne on droplets can travel upto 20-25 feet.

⮞ The study thus established that a lot of the (SARS-CoV-2) infection is due to the movement of the virus particles in droplets through the air.

⮞ Air cleaning and circulation in closed rooms is very important. Sterilisation filters may be employed for air conditioning.

SCIENTISTS WARN OF ZIKA SPREAD TO NEWER AREAS

Why in news?

⮞ Scientists at the National Institute of Virology (NIV), Pune, have raised an alarm about the spread of the Zika virus, along with dengue and chikungunya, in several States and Union Territories where it has never been reported earlier, establishing local transmission in India.

States under threat:

⮞ Scientists have called for urgent strengthening of surveillance, after the circulation of Zika virus was detected in Delhi, Jharkhand, Rajasthan, Punjab, and Telangana in 2021, in addition to Kerala, Maharashtra, and Uttar Pradesh.

⮞ Previously, sporadic cases were reported from Gujarat (2016-17), Tamil Nadu (2017), Madhya Pradesh and Rajasthan (2018).

Co-infection:

⮞ The researchers also found co-infection of Zika, dengue and chikungunya, which, they said, was another concern in many places. There was a need to be aware and take preventive measures.

About Zika virus (ZIKV):

⮞ Zika virus is a mosquito-borne flavivirus that was first identified in Uganda in 1947 in monkeys. It was later identified in humans in 1952 in Uganda and the United Republic of Tanzania.

⮞ The Zika virus is caused by a virus transmitted primarily by the bite of infected Aedes mosquitoes, mainly Aedes aegypti and Aedes albopictus.

Symptoms:

⮞ Symptoms are generally mild and include fever, rash, conjunctivitis, muscle and joint pain, malaise or headache.

⮞ Symptoms typically last for 2–7 days. Most people with Zika virus infection do not develop symptoms.

⮞ Zika virus infection during pregnancy can cause infants to be born with microcephaly and other

congenital malformations, known as congenital Zika syndrome.

- Infection with Zika virus is also associated with other complications of pregnancy including preterm birth and miscarriage.
- An increased risk of neurologic complications is associated with Zika virus infection in adults and children, including Guillain-Barré syndrome, neuropathy and myelitis

Way Forward:

- The development of quick and reliable tests as well as validating the utility of simple serology-based tests for ZIKV would help in augmenting the diagnostic capabilities.
- With the massive upscaling of the COVID-19 RT-PCR testing laboratories in India, this network can also be re-purposed for augmenting ZIKV testing.

HIMACHAL PRADESH GOVT. TO BUY-BACK SINGLE-USE PLASTIC ITEMS FROM STUDENTS

Why in news?

- As the Centre has decided to ban the use of single-use plastic from July 1, the State of Himachal Pradesh is all set to kick-start a buy-back scheme in schools and colleges to purchase the single-use plastic items from students in a bid to instill a sense of environment preservation by 'catching them young'.
- Under the novel scheme, the students would be encouraged to bring single-use plastic items from their home and deposit it with the school, for which they will be paid ₹75 a kg by the government.
- The aim is to inculcate a habit among the youngsters towards environment conservation.

Implementing agency:

- The scheme will be implemented in all the schools and colleges through the Eco-clubs.
- There are 3,000 Eco-clubs in schools and in 100 colleges under the National Green Corps programme.
- These Eco-clubs are an association of student-teachers that work to inculcate environmental awareness and protection.

HIMCOSTE:

- The Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE), is the

State nodal agency for the National Green Crops; Eco-club Programme of the Ministry of Environment, Forest and Climate Change of Government of India and is implementing the national scheme in 3000 Eco-club schools and 100 colleges in Himachal Pradesh.

Community involvement:

- Besides the students, the scheme also aims to involve teachers, school management committees and parents by creating awareness surrounding the ill-effects of plastic waste at the district-level through the Eco-club schools, covering both rural and urban schools.
- The project aims to achieve a reduction in waste littering, especially single-use in and around the school campus, homes of Eco-club students and others in its first phase.

What's next?

- The single-use plastic items collected from the schools would then be handed over to the Public Works Department and this plastic will be used in bitumen to construct roads in the State.
- The roads built with plastic-bitumen are durable and long-lasting, besides it would help to dispose of the waste plastic.

RESEARCHERS AT IISC. DEVELOP ALGORITHM TO STUDY CONNECTIVITY IN BRAIN
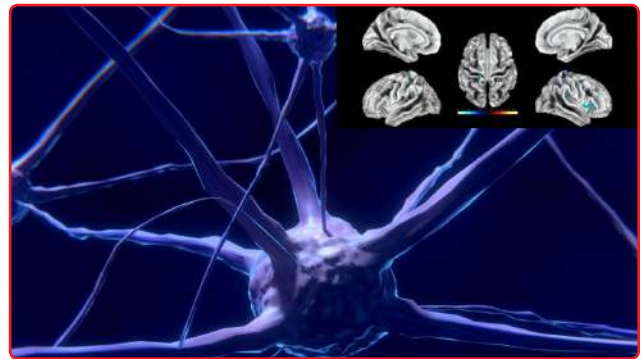
Why in news?

- Researchers at Indian Institute of Science (IISc.) have developed a new graphic processing unit (GPU) based machine learning algorithm called Regularised, Accelerated, Linear Fascicle Evaluation (ReAl – LiFE).
- It will help to obtain a better understanding and in the prediction of connectivity between different regions of human brain.

Use of ReAl – LiFE:

- This algorithm can help analyse extensive data generated from diffusion Magnetic Resonance Imaging (dMRI) scans which helps scientists study the connectivity in the brain at a speed, which is 150 times higher than a regular desktop computer or existing state-of-the-art algorithms.

- With the study, researchers tried to study the wiring of different parts of the brain which helps in performing various computations.
- While these patterns can be studied in animals through invasive techniques, in humans, dMRI is used to infer white matter patterns.
- Through it, scientists can track the movement of molecules to create a comprehensive map of connectome, which is a network of fibres across the brain.
- The accurate identification of information networks, conventional algorithms matched the predicted dMRI signals from the inferred connectome with the observed dMRI signal.

Upgradation of LiFE (Linear Fascicle Evaluation):

- A similar algorithm called LiFE (Linear Fascicle Evaluation) was developed earlier to carry out optimisation, but since it worked on traditional CPUs, the computation was time-consuming.
- In the new study, they tweaked their algorithm to cut down the computational effort involved in several ways, including removing redundant connections, thereby improving upon LiFE's performance significantly.
- To speed up the algorithm further, the team also redesigned it to work on specialised electronic chips which helped them analyse data at speeds 100-150 times faster than previous approaches.

Way Forward:

- This algorithm will have various applications in the field of health, including disease diagnosis and behavioural studies.
- While certain patterns of brain connectivity can explain the inter-individual differences in the attention test scores which help determine behaviours, a previous version of the same algorithm can also help distinguish between Alzheimer's patients and healthy age matched controls just by measuring brain connectivity.

REPORT ON FUTURE PENETRATION OF ELECTRIC TWO-WHEELERS IN THE INDIAN MARKET

Why in news?

- Recently, NITI Aayog and TIFAC launched a report titled 'Forecasting Penetration of Electric Two-Wheelers in India'.

Details:

- Using a tool made by NITI Aayog and TIFAC, eight scenarios have been developed for analyzing the future penetration of electric two-wheelers in the country.
- In an optimistic scenario, the report forecasts 100% penetration of electric two-wheelers in the Indian market by FY 2026–27.

- In another scenario, which is technology driven and where current incentives are withdrawn by 2024, the report predicts 72% penetration by 2031.
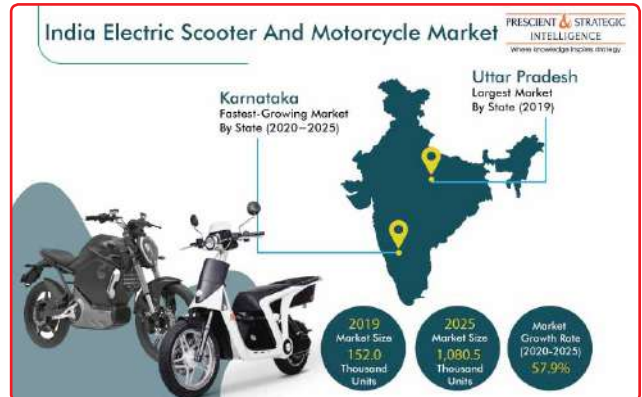
The eight scenarios considered are:

a) Challenged Diffusion
b) Performance Driven
c) Low Battery Cost
d) Technology Driven
e) Incentive Driven
f) Battery Cost Challenged
g) Same Performance
h) Optimistic

Future scenarios:

The future scenarios have been constructed on the basis of three major factors that influence the market penetration of electric two-wheelers:

a) demand incentives
b) cost of battery
c) vehicle performance in terms of both range and power

Four broad constraint levels:

Four broad constraint levels have also been identified for the eight scenarios, in terms of installed vehicle manufacturing capacity and available charging infrastructure:

a) full constraint (where both vehicle production and charging infrastructure are constraints)
b) production constraint (where only vehicle production is a constraint)
c) charge constraint (where only the charging infrastructure is a constraint)
d) no constraint.

Highlights:

- In the 'Technology Driven' scenario, if an R&D programme manages to enhance the range and power of electric two-wheelers by 5% annually between FY 2023–24 and 2025–26, and by 10% in FY 2026–2027, then the penetration of electric-two wheelers may reach about 72% in FY 2031–32—even with no extension of demand incentives.

- The sale of electric two-wheelers may cross 220 lakh units in FY 2028–29 under the 'Optimistic', 'Same Performance' and 'Battery Cost Challenged' scenarios.
- It may reach 180 lakh units under the 'Technology-Driven' scenario. Under the 'Incentive Drive' scenario, the sale is expected to reach only 55 lakh units in FY 2031.
- If there is sufficient installed capacity of electric two-wheelers and charging infrastructure, then sale (which finally reaches about 250 lakh units) may at some point even surpass the production under the 'Optimistic', 'Same Performance' and 'Battery Cost Challenged' scenarios.

Way Forward:

- The report provides important insights into the required infrastructure, manufacturing capability, policies, and technology-development priorities in the area.
- The scenarios can be used by government agencies, the industry, and academic/R&D institutions for evidence-based analysis of policies, market scenarios and technology development strategies.

SCIENTISTS DEBUT ARTIFICIAL PHOTOSYNTHESIS
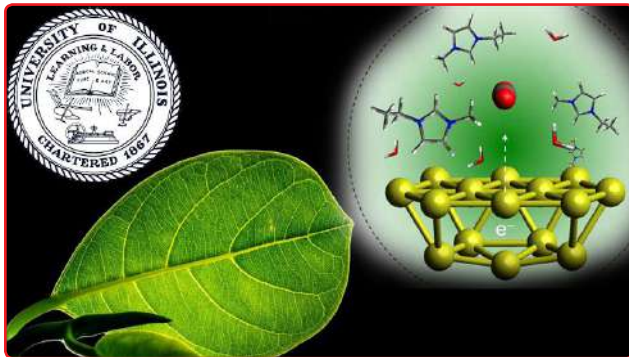
Why in news?

- Recently, Scientists from from UC Riverside and the University of Delaware have now come up with a new way to replicate the process of photosynthesis without sunlight.

What is Photosynthesis?

- Photosynthesis is a process that converts sunlight into energy and plant life thrives due to this phenomenon, as they use solar energy to break it down to create oxygen and energy in the form of sugar using water, and carbon dioxide.

Key Highlights:

- Scientists have bypassed the need for biological photosynthesis altogether and create food independent of sunlight by using artificial photosynthesis.
- The study stresses two steps electrocatalytic process to convert carbon dioxide, electricity, and water into acetate, the form of the main component of vinegar.

- The acetate thus created is consumed by food-producing organisms in the dark to grow.

Mechanism:

- They team used electrolyzers are devices that use electricity to convert raw materials like carbon dioxide into useful molecules and products.
- The amount of acetate produced was increased while the amount of salt used was decreased, resulting in the highest levels of acetate ever produced in an electrolyzer to date.

Outcome:

- The study reveals that a wide range of food-producing organisms can be grown in the dark directly on the acetate-rich electrolyzer output, including green algae, yeast, and fungal mycelium that produce mushrooms.
- Yeast production is about 18-fold more energy-efficient than how it is typically cultivated using sugar extracted from corn.

Way Forward:

- This technology is a more efficient method of turning solar energy into food, as compared to food production that relies on biological photosynthesis.
- The team has also submitted its design to Nasa's Deep Space Food Challenge where it bagged the phase 1 prize.

CULTURE

NATIONAL STRATEGY FOR SUSTAINABLE TOURISM AND RESPONSIBLE TRAVELLER CAMPAIGN

Why in news?

- Recently, National Summit on Developing Sustainable & Responsible Tourist Destinations was launched in New Delhi.
- It was organized by Ministry of Tourism, in partnership with United Environment Program (UNEP) and Responsible Tourism Society of India (RTSOI).

Tourism & Environment:

- Tourism and Environment share a Special Relationship. Their interaction with each other is a two-way process.
- On the one hand environmental resources constitute one of the basic ingredients of tourism. The natural and manmade setting form the tourism products which the tourist enjoys, live in, and relax.
- On the other hand, the close and direct relationship between visitors, host communities and local environment creates a sensitive situation, whereby tourism can be both very damaging but also very positive for sustainable development.
- The COVID-19 pandemic has further forced the tourism sector to shift its focus to resiliency, sustainability

and interconnectedness among diverse stakeholders in the sector.

Swadesh Darshan:

➲ The Ministry of Tourism with the objective to provide experience to the tourists launched Swadesh Darshan Scheme and has till now sanctioned 76 Projects.

➲ With the learnings of this scheme, the Swadesh Darshan Scheme has now been revamped as Swadesh Darshan 2.0.

Sustainable tourism:

➲ The idea of Swadesh Darshan 2.0 is to undertake holistic development with the vision to develop Sustainable and Responsible Tourist Destinations.

➲ Through the Swadesh Darshan 2.0 sustainable and responsible tourism practices will be implemented in various projects and initiatives.

➲ The Scheme will encourage adoption of principles of sustainable tourism including environmental, socio-cultural and economic sustainability.

Way Forward:

➲ State tourism policies should recognise sustainability principles and the Sustainable Development Goals in their vision and strategic direction for tourism.

MUMBAI INTERNATIONAL FILM FESTIVAL 2022

Why in news?

➲ Recently, the awards of the Mumbai International Film Festival for Documentary, Short Fiction and Animation Films was presented by the Governor of Maharashtra at the valedictory ceremony held at the Nehru Centre, Mumbai.

Competitors:

➲ 18 documentary films from Australia, Canada, Germany, Ireland, Italy, Netherlands, Panama, South Korea and UK, besides India were in the International Competition section of MIFF 2022

List of Winners:

Golden Conch award for the Best Documentary Film:

➲ The Dutch documentary film "Turn Your Body to the Sun" that tells the incredible story of a Soviet Prisoner of War, has won the prestigious Golden Conch award for the Best Documentary Film at MIFF 2022.

➲ The Award carries a Golden Conch, a Certificate and cash prize of Rs 1 million (Rs 10 lakhs).

Best Short-fiction:

➲ In the Short Fiction category, Malayalam film 'Saakshatkaaram' shares the Silver Conch award with Gudmund Helsmsal's 'Brother Troll' a film from Faroe Islands of Denmark.

➲ The awards carry a Silver Conch, a certificate and cash prize of Rs. 2.5 lakhs, to be shared equally between the director and the producer.

Best Animation Film:

➲ 'Prince in a Pastry Shop' directed by Polish filmmaker Katarzyna Agopsowicz, won the Silver Conch for Best Animation Film in International Competition category.

➲ The award carries a Silver Conch, a certificate and cash prize of Rs. 5 lakhs, to be shared equally between the director and the producer.

Most Innovative / Experimental Film':

➲ 'Closed to the Light' directed and produced by Italian film maker Nicola Piovesan won the 'Pramod Pati - Most Innovative / Experimental Film' in this edition.

➲ Nicola Piovesan will get Rs.1, 00,000 cash prize along with a trophy and certificate.

Part II: National Competition Awards

➲ 'Admitted' directed by Ojaswwee Sharma won the Silver Conch award for Best Documentary Film (above 60 minutes) in National Competition section.

➲ 'Screaming Butterflies' directed by Assamese Director Aimee Barua and produced by Mala Barua won the Silver Conch award for Best Documentary Film (below 60 minutes) in National Competition section. 'Geru Patra' directed by Shristipal Singh won the Silver

Conch for 'Best Short Fiction Film' (upto 45 minutes) in National Competition section.

- 'Kandittundu (Seen It)' directed by Adithi Krishnadas has been awarded the Silver Conch for Best Animation Film in National Competition section for its subtly hilarious take on the fantasy folklore of Kerala.

Dadasaheb Phalke Chitranagari Award for Best Debut Director '

- Dadasaheb Phalke Chitranagari Award for Best Debut Director at MIFF 2022 has been awarded to Bimal Poddar for his film 'Radha'.
- The award carries a trophy, certificate and prize money of Rs. 1 lakh.

IDPA Award for Best Student Film:

- IDPA Award for Best Student Film at MIFF2022 has been awarded to 'Megha', the Bengali film directed by Rishi Bhaumik.
- The award carries a trophy, certificate and prize money of Rs. 1 lakh.

15TH CENTURY VIJAYANAGARA EMPIRE STONE INSCRIPTION FOUND IN UDUPI

Why in news?

- A stone inscription belonging to 15th century Vijayanagara empire was found in Nandanavana village of Byndoor taluk in Udupi district in Karnataka.

Description of the inscription:

- The inscription found is inscribed in Kana stone.
- The inscription which is 5 feet tall and 2.5 feet wide has 38 lines in Kannada.
- On either side of the Vamana idol on the top end, conch, chakra, sun and moon are carved.
- It has a headline, 'Swasti Sri Ganadhipataye Namah' and the date is mentioned as 1442 Varthamana Pramadhi Samvatsarada Shravana Shuddha 15 Budhawara which means August 21, 1519 AD.

Prayer:

- The inscription is a prayer for the long life and prosperity of ruler Vijayappa Odeya.
- The inscription had also received a donation from Keshava Upadhyaya, son of Eshana Upadhyaya of Angirasa Gothra.

Dateline:

- The dateline on the stone inscription clearly states that this belonged to the times of Tuluva king Krishnadevaraya of Vijayanagara Empire.
- During the period, Barakoora state was ruled by Vijyappa Odeya, son of Ratnappa Odeya.

PRIME MINISTER'S AWARDS FOR OUTSTANDING CONTRIBUTION TOWARDS THE DEVELOPMENT AND PROMOTION OF YOGA-2021

Why in news?

- Recently, the Prime Minister's Award for Outstanding Contribution towards the Development and Promotion of Yoga, was announced for the year 2021.

Winners:

- Two individuals, namely Bhikkhu Sanghasena Leh, Ladakh and Marcus Vinicius Rojo Rodrigues, Sao Paulo, Brazil, and
- Two organisations, namely, The Divine Life Society, Rishikesh, Uttarakhand and the British Wheel of Yoga, United Kingdom are the recipients of the same.

About award:

- The awards for the Outstanding Contribution towards the Development and Promotion of Yoga was announced by the Prime Minister of India on the occasion of the 2nd International Day of Yoga celebrations at Chandigarh on 21st June, 2016.
- The Ministry of Ayush, Government of India developed the guidelines for the said awards.
- The winners will be felicitated with of a Trophy, Certificate and a Cash Award each. The value of each Cash Award would be Rs. 25.00 lakh.

DISCOVERY SHEDS LIGHT ON REGION'S TRANSITION FROM CHRISTIANITY TO ISLAM

Why in news?

- Israeli archaeologists unveiled a rare ancient mosque in the country's south that sheds light on the region's transition from Christianity to Islam.
- The remains of the mosque, believed to be more than 1,200 years old, were discovered during works to build a new neighbourhood in the Bedouin city of Rahat.

Key Highlights:

- The mosque located in the Negev desert contains "a square room and a wall facing the direction of Mecca", with a half-circle niche in that wall pointing to the south.
- These unique architectural features show that the building was used as a mosque, noting it probably hosted a few dozen worshippers at a time.
- A short distance from the mosque, a "luxurious estate building" was also discovered, with remains of tableware and glass artefacts pointing to the wealth of its residents.

Background:

- Three years ago, the authority unearthed another mosque nearby from the same era of the seventh to eighth century AD, calling the two Islamic places of worship "among the earliest known worldwide".
- The mosques, estate and other homes found nearby illuminate "the historical process that took place in the northern Negev with the introduction of a new religion — the religion of Islam, and a new rulership and culture in the region.

MISCELLANEOUS

HISTORIC TORCH RELAY FOR 44TH CHESS OLYMPIAD

Why in news?

- Recently, the Prime Minister launched the historic torch relay for the 44th Chess Olympiad today at Indira Gandhi Stadium, New Delhi.

- He in turn handed it over to Grandmaster Vishwanathan Anand.

First Chess Olympiad in India:

- India is hosting the prestigious Chess Olympiad for the first time and in the process, Asia gets to host the event after a gap of 30 years.
- Philippines last hosted it from Asia in 1992.
- Being the host, India is set to field 20 players at the 44th FIDE Chess Olympiad. India is entitled to field 2 teams each in the Open and Women's category. Over 2000 participants will be representing at the event from 188 countries.
- The 44th Chess Olympiad will be held in Chennai from 28th July to 10th August , 2022.

India's achievements in Chess Olympiad:

- India, who made its debut at the event in 1956 Moscow (27th position), has a gold medal (joint winners with Russia in 2020) and two bronze medals (2021, 2014) from the Chess Olympiad.
- While the 2020 and 2021 editions were held virtually owing to the Covid 19 pandemic, the 2022 edition will be the first over-the-board Chess Olympiad being held since 2018 in Georgia.

What's next?

- This torch will be taken to 75 cities in a span of 40 days before the final culmination at Mahabalipuram near Chennai before heading over to the FIDE Headquarters, Switzerland.

PRACTICE QUESTION FOR UPSC PRELIMS EXAM

1. Recently train services started between India and Bangladesh after Pandemic. Which among the following train/s services were started between the two countries?
   1. Mitali Express
   2. Maitree Express
   3. Bandhan Express

   Choose the correct option from the codes given below:
   a) 1 and 2 Only
   b) 2 Only
   c) 1 and 3 Only
   d) 1, 2 and 3

2. Consider the following statement:
   1. If the government earned more from tax than spend on subsidy, GDP will be higher than GVA.
   2. If the government provided subsidies in excess of its tax revenues, GVA will be higher than GDP.

   Choose the correct option from the codes given below
   a) 1 Only
   b) 2 Only
   c) Both 1 and 2
   d) None of the above

3. Recently, India scaled its highest ever exports tally in Textiles and Apparel (T&A). The top exporting nation is
   a) France
   b) Japan
   c) South Korea
   d) USA

4. Consider the following statement:
   1. Article 142 provides discretionary power to the Supreme Court.
   2. States had the power to aid and advice the Governor in case of pleas of pardon under Article 161.
   3. The subject matter of "murder" falls under the fifth schedule.

   Choose the correct option from the codes given below:
   a) 1 and 2 only
   b) 2 and 3 only
   c) 1 and 3 only
   d) 1, 2 and 3

5. Consider the following statement regarding The Aadhaar (Targeted Delivery of Financial and Other Subsidies Benefits and Services) Act, 2016:
   1. Aadhaar authentication is not necessary for availing subsidies from the Consolidated Fund of India.
   2. Aadhaar Payments Bridge and the Aadhaar Enabled Payment System facilitate direct benefit transfer.

   Choose the correct option from the codes given below
   a) 1 Only
   b) 2 Only
   c) 1 and 2
   d) None of the above

6. Consider the following statements:
   1. Neptune and Uranus have similar masses, sizes, and atmospheric compositions.
   2. Uranus has a more active, turbulent atmosphere than Neptune.

   Which among the following statements is/are not correct?
   a) 1 Only
   b) 2 Only
   c) 1 and 2
   d) None of the above

7. The government decided to restrict sugar exports. Consider the following statement:
   1. To ensure domestic availability and price stability.
   2. Orderly trade in the context of ever-increasing export shipments of sugar.
   3. Threat of food crisis caused by supply-chain disruption.

   Which among the following reason could be cited for the major cause of such restriction?
   a) 1 and 2
   b) 2 and 3
   c) 1 and 3
   d) 1, 2 and 3

8. Recently, Bihar established an elephant rescue centre to Valmiki Tiger Reserve, located in
   a) Jamui
   b) Katihar
   c) Madhepura
   d) West Champaran

9. Which among the following country has been exempted for pipeline imports of oil from Russia, though not being a landlocked country?
   a) Hungary
   b) Bulgaria
   c) Czech Republic
   d) Slovakia

10. The Supreme Court set aside a National Green Tribunal order prohibiting construction work at Rushikonda hills in Visakhapatnam. Consider the following statement:
    1. It held that the NGT is subordinate to the high court as far as territorial jurisdiction is concerned.
    2. The Court held that construction would be carried out only on the flat area.
    3. The National Green Tribunal was established under the National Green Tribunal Act 2010.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

11. Recently, Bihar Cabinet approved a proposal to carry out a caste-based 'count' in the State. Consider the following statement regarding the benefit of caste count:
1. Proper implementation of Social equality programmes and welfare measures.
2. A count of every category of citizens is necessary so that they can get the benefit of all welfare measures.
3. In the absence of such data, there is no proper estimate for the population of OBC and EBC

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

12. Consider the following statement regarding the Pacific Island countries:
1. The Pacific Island Countries are located in the temperate zone of the Atlantic Ocean.
2. The islands are divided into three distinct parts of Micronesia, Melanesia and Polynesia.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

13. Consider the following statement:
1. The Ministry of Electronics and Information Technology (MeitY) has proposed the setting up of appellate committees.
2. Under the IT Rules, social media companies may appoint India-based resident grievance officers.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

14. Consider the following statement regarding the judgement of Supreme Court on power of GST Council:
1. Court omitted GST Disputes Settlement Authority.
2. Recommendations of the GST Council had only a persuasive value.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

15. Recently, a first-of-its kind Daily Food Price Index (DFPI) to track inflation in retail and wholesale food markets on a real time basis has been developed by
a) Delhi University
b) Bharathidasan University

c) Ashoka University
d) Vikrama Simhapuri University

16. Recently Supreme Court gave Judgement to object frivolous petitions and gave some direction. Consider the following statement:
1. Verifying the credentials of the petitioner before entertaining the plea.
2. Checking the correctness of the contents.
3. Ensuring the petition involves issues of larger public interest, gravity and urgency.

Choose the correct decision given by Supreme Court:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

17. Recently IIM-Ahmedabad has joined hands with an e-marketplace to bring out agricultural land price index. Choose the incorrect option from the statement given below:
a) The index has been designed to record and present the "quality-controlled" data on prices of agricultural land.
b) The index will track the price movements in the marketplace.
c) The index will be updated once in a year.
d) The index will not have any correlation with circle rates

18. Recently, the Supreme Court gave direction for national parks and wildlife sanctuaries. Consider the following statement:
1. It will have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.
2. Permanent structure will be allowed within the ESZ.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

19. Consider the following statement regarding the "SHRESHTA" Scheme:
1. The scheme was launched by Ministry of Education.
2. The scheme provide quality education and opportunities for even the poorest Scheduled Caste students.
3. The students, belonging to Scheduled Castes, studying in class 8th and 10th are eligible for the benefits of scheme.

Choose the correct decision given by Supreme Court:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

20. Consider the following statement regarding the launched of two mission to Moon by NASA:
1. Lunar-VISE will provide biological research on the Moon which cannot be simulated or replicated with high fidelity on the Earth.
2. LEIA will explore the summit of one of the Gruithuisen Domes.

Choose the correct option from the codes given below:
a) 1 Only
b) 2 Only
c) 1 and 2 Both
d) None of the above

21. Consider the following statement:
    1. One in every 36 infants dies within the first year of their life in India.
    2. Present infant mortality rate is less than one-fourth as compared to 1971.
    3. Infant Mortality Rate in rural area shows increasing tendency.
    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) 1, 2 and 3

22. Consider the following statement regarding the strategic pillars for development of sustainable tourism and choose the correct option:
    a) Protecting Biodiversity
    b) Promoting Economic Sustainability
    c) Capacity Building and Governance
    d) All the above

23. Consider the following statement:
    1. According to WHO, Countries where the monkeypox virus was endemic are Central African Republic, Sierra Leone and South Sudan.
    2. A vaccination with chickenpox is said to be protective against monkeypox.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

24. Consider the following statement regarding Foreign Portfolio Investors (FPI):
    1. Foreign portfolio investments typically include equities, bonds and mutual funds.
    2. Consumption expenditure has remained weak in the subcontinent.
    3. Foreign portfolio investors have been increasing market investments due to Russia-Ukraine War.
    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) 1, 2 and 3

25. Globally Central bankers are trying to formulate the appropriate set of policies because it is predicted that stagflation is engulfing the nations. Consider the following statement:
    1. Take advantage of the current strong job market.
    2. Create and follow a budget
    Which among the following is the steps taken to avert stagflation:
    a) 1 Only
    b) 2 only
    c) 1 and 2
    d) None of the above

26. Consider the following statement regarding the recently launched State of Environment Report, 2022:

    1. Three of every four river in India has heavy toxic metals such as lead, iron, nickel and copper.
    2. Rivers under Namami Gange mission has low levels of lead, iron, nickel, cadmium and arsenic.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2 Both
    d) None of the above

27. Consider the following statement regarding eVTOL and choose the incorrect option:
    a) It uses electric power to hover, take off, and land vertically.
    b) There is a single motors for various functions.
    c) It is a runway independent technological solution.
    d) It is a third wave in an aerial revolution.

28. Consider the following statement regarding Indo-Pacific Maritime Domain Awareness (IPMDA) initiative:
    1. Indo-Pacific Maritime Domain Awareness (IPMDA) initiative was announced at Tokyo Summit.
    2. It aims to track "dark shipping" only in Indo-Pacific Region.
    3. There are two main regulations globally on IUU fishing, the Cape Town Agreement (CTA) and the Agreement on Ports State Measures (PSMA).
    4. India recently became a signatory to Cape Town Agreement (CTA) and the Agreement on Ports State Measures (PSMA).
    Choose the correct option from the codes given below:
    a) 1, 2 and 3
    b) 2, 3 and 4
    c) 1 and 3
    d) 2 and 4

29. Consider the following statement regarding BALTOPS naval exercise:
    1. This exercise was started by Baltic countries.
    2. Finland and Sweden are not the participant of this exercise.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2 Both
    d) None of the above

30. Consider the following statement regarding Indo-Pacific Economic Framework for Prosperity (IPEF):
    1. IPEF was launched with the twin ambitions of the U.S. to provide economic leadership and to challenge China's hegemony in the region.
    2. IPEF covers four pillars namely, fair and resilient trade, supply chain resiliency, clean energy decarbonisation, and tax and anti-corruption.
    3. New Caledonia of Pacific Island State joined the initiatives.
    Choose the correct option from the codes given below:

a) 1 and 2 Only   b) 2 and 3 Only
c) 1 and 3 Only   d) 1, 2 and 3

31. A multinational Joint Exercise "Ex Khaan Quest 2022" is hosted by
a) Mongolia   b) Kazakhstan
c) Kyrgyzstan   d) Turkmenistan

32. Consider the following statement regarding BIMSTEC:
1. It has a free trade agreement amongst its members.
2. It has adopted Master Plan for Connectivity supported by the Asian Development Bank.
3. The grouping has talked about the Blue Economy but it is yet to begin any work on it.
Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

33. Recently Supreme Court Judgement asserted that sex workers and their children cannot be deprived of their right to live with dignity. Consider the following statement:
1. No child of a sex worker should be separated from the mother merely on the ground that the mother is in the sex trade.
2. Government should involve sex workers or their representatives in the process of decision-making.
Which among the above following recommendation are made by Supreme Court?
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

34. Recently, the Delhi High Court issued notice to the Centre on a petition challenging provisions of the Surrogacy Act and the Assisted Reproductive Technology (ART) Act. Consider the following statement:
1. Both married and unmarried couple can opt for surrogacy on medical grounds.
2. Couple having their own child can also opt for surrogacy.
Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

35. Consider the following statement regarding the solar energy potential in the North East Region of India:
1. The realized potential of solar power in North Eastern Region is less than 1 percent.
2. North Eastern Region has vast hydro potential capacity.
Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

36. The Ministry of Defence has issued a notification amending the rules of defence forces for the appointment of next Chief of Defence Staff (CDS). Consider the following statement:
a) An officer must be either serving, or retired, in the rank of general or lieutenant general.
b) He should be below 65 years on the date of his appointment.
What are the criteria set by the government of India for the appointment of CDS?
a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

37. Prime Minister launched a PM CARES for Children scheme to support children who lost their parents or a primary caregiver to the COVID-19 pandemic. Consider the following statement:
1. PM CARES fund is under the purview of the Right to Information (RTI) Act.
2. PM is the Chairman or ex-officio of the fund.
3. Minister of Defence, Minister of Home Affairs and Minister of Finance are the trustees of the fund's
Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

38. Consider the following statement regarding "Bad Bank":
1. It is a financial entity set up to buy non-performing assets (NPAs), or bad loans, from banks.
2. It may later try to restructure and sell the NPA to investors who might be interested in purchasing it.
Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

39. Consider the following statement regarding Rajya Sabha:
1. Its MP's are elected by MLAS through an indirect election.
2. The Fourth Schedule to the Constitution provides for allocation of Rajya Sabha seats.
3. A nominated member may join a party within six months of taking a seat.
Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

40. Consider the following statement regarding the 4th State Food Safety Index and choose the incorrect option:
a) NITI Aayog does the rating for State Food Safety Index.
b) Tamil Nadu was the top ranking state.

c) State Food Safety Index was started from 2018-19.

d) Among UTs, Jammu & Kashmir secured the first place.

41. Consider the following statement:
   1. Russia share in the global export of wheat is more than Ukraine.
   2. Ukraine is the largest exporter of corn.

   Choose the correct option from the codes given below:

   a) 1 Only   b) 2 Only
   c) 1 and 2   d) None of the above

42. Recently, in a medical trial, 12 patients in the United States were completely cured of rectal cancer. Consider the following statement:
   1. Immunotherapy treatment in India had not been started yet.
   2. 'Mismatch repair deficient' cancer is most common among colorectal, gastrointestinal, and endometrial cancers.
   3. PD1 is a type of protein that regulates certain functions of the immune system, including by suppressing T cell activity.

   Choose the correct option from the codes given below:

   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

43. Recently, Spain voted to approve bill that makes consent a key factor in sexual assault cases. Consider the following statement:
   1. The draft law eliminates the legal distinction between 'sexual assault' and 'sexual abuse'.
   2. The Bill also brings female genital mutilation, forced marriage, harassment within the ambit of sexual violence.

   Choose the correct option from the codes given below:

   a) 1 Only   b) 2 Only
   c) 1 and 2   d) None of the above

44. Recently, the Reserve Bank of India's Monetary Policy Committee (MPC) voted unanimously to raise the repo rate in a bid to slow inflation. Consider the following statement and choose the incorrect option:
   a) The change in Repo rate has a direct effect on retail loans.
   b) NBFC deposits and Fixed income investors will get benefit.
   c) The prices are determined by the supply and the demand for goods and services in an economy.
   d) Inflation will be affected by money supply alone.

45. Recently Union Cabinet signed MoU with UAE on Cooperation in the field of Industries and Advanced Technologies.
   Consider the following statement:
   1. Renewable & Energy Efficiency
   2. Artificial Intelligence

   3. Encourage climate resilient water management practices

   Choose the correct option from the codes given below:

   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

46. Recently the Environment Performance Index (EPI) 2022 was released. Consider the following statement:
   1. The EPI is an analysis by researchers of Yale and Columbia University.
   2. India rank is lower than China.
   3. Norway was the top the list in this index.

   Choose the correct option from the codes given below:

   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

47. Consider the following statement regarding the rejection of votes in Rajya Sabha and choose the incorrect option:
   a) Open ballot voting applies in elections to Council of States only.
   b) Under Rule 39AA, MLAs belonging to a political party shall show their ballot papers to the authorised agent of other parties.
   c) Independent MLAs are required to insert the marked ballot paper.
   d) MLA has to mark his or her choice of candidates by ranking them and they also have to use a special pen provided by the EC.

48. Consider the following statement:
   1. India became party to TRIPS Agreement in 1995.
   2. India is a signatory to Berne Convention.

   Choose the correct option from the codes given below:

   a) 1 Only   b) 2 Only
   c) 1 and 2 Both   d) None of the above

49. Consider the following statement regarding the water crisis in Bundelkhand:
   1. The rainfall is capricious and erratic in amount, pattern, intensity and distribution.
   2. It has a larger share of rocky formation with slopy terrain.
   3. This region has an unusually high rate of water run-off gushing towards the north, creating deep gorges and rapids.

   Choose the correct option from the codes given below:

   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

50. Recently, the 118th meeting of the Permanent Indus Commission (PIC) comprising the Indus Commissioners of India and Pakistan was held in New Delhi. Consider the following statement:
   1. Pakistan raised objections regarding the technical design features of the Kishanganga and Ratle hydroelectric power plants located on the tributaries of the Jhelum and the Chenab.

2. Indus Water Treaty allocated Jhelum and the Chenab River to India.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

51. Recently, scientists have found microplastics in freshly fallen Antarctic snow. Consider the following statement:

1. The most common microplastics being PET, commonly used to make soft drink bottles and clothing.
2. An average of 29 microplastic particles per litre reported from melted snow, which is higher than marine concentrations.
3. In Antarctica, the density of microplastics was nearly five times higher.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

52. Recently, Russia supplied TVS-2M nuclear fuel for Kudankulam Nuclear Power Plant. Consider the following statement:

1. The new fuel does not increases uranium capacity.
2. Due to its welded frame, the fuel assemblies in the reactor core retain their geometry.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

53. Recently CCPA issued guidelines for Prevention of Misleading Advertisements and Endorsements. Consider the following statement:

1. It aims to curb misleading advertisements and protect the consumers.
2. Right to be safeguarded against potentially unsafe products and services.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

54. Recently, the Organisation of Islamic Cooperation (OIC) was in new. Consider the following statement regarding OIC:

1. It was established at a 1969 summit in Rabat.
2. The OIC has consultative and cooperative relations with U. N. and other inter-governmental organisations to protect the interest of Muslims.
3. OIC plans to permanently move its headquarters to East Jerusalem once the disputed city is 'liberated'.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

55. Recently the Ministry of Coal released an action plan for 2022-23. Consider the following statement:

1. India target of sourcing 50 percent energy requirement from renewables energy by 2030.
2. India targeted 250 GW non-fossil fuel electricity capacity by 2030.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

56. Consider the following statement:

1. United Nations General Assembly (UNGA) has adopted Hindi language for the first time.
2. Arabic, Chinese, English, French, Russian and Spanish being the working languages of the United Nations Secretariat.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

57. Who among the following has been appointed as UN Chief's envoy on technology?

a) T. S. Tirumurti
b) Amandeep Singh Gill
c) Asoke Kumar Mukerji
d) Prakash Shah

58. Consider the following statement:

1. Out of India's total imports of crude oil, the share of the Gulf countries is about 60%.
2. In 2020-21, the top oil exporter to India was Iraq.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

59. Monkeypox cases have been detected in 18 countries in Europe. Consider the following statement regarding the mode of transmission of this disease:

1. Men who have sex with men and bisexual men.
2. Touching and being face-to-face
3. Mouth-to-skin contact

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

60. Recently SEBI had expressed its concern about crypto currency. Consider the following statement:

1. Crypto exchanges to be brought under the regulatory purview of the SEBI.
2. SEBI has said that crypto assets are not part of Securities Contracts (Regulation) Act of 1956, also known as SCRA.
3. SEBI has suggested that the Consumer Protection Act of 2019 be invoked to make sure their interests are safeguarded.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

61. Consider the following statement:
    1. The election of the President is held in accordance with the system of proportional representation by means of single transferable vote.
    2. The EVMs are designed to register proportional representation of voting.
    Choose the correct option from codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

62. Consider the following statement regarding Farmer Registration & Unified Beneficiary Information System or FRUITS software:
    1. It facilitates multiple registration using an Aadhar card, Voter card, driving license etc.
    2. Farmers can access benefits of hosts of schemes such as Direct Benefit Transfer under PM Kisan.
    3. The software allows various departments to access information about the farmers under a single platform.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

63. Consider the following statement regarding Child Labour in Indian and choose the incorrect option:
    a) The UN general assembly in 2015 adopted the Sustainable Development Goals (SDGs), one of which was to eliminate all forms of Child labour by 2025.
    b) World Day Against Child Labour is celebrated on June 12.
    c) Top three child labour state by 2025 will be Odisha, Chhattisgarh and Madhya Pradesh.
    d) According to the 2011 census of India, the total number of child labourers in the country is 1.01 crore (10 million).

64. India has the highest number of incident and prevalent cases of Type-1 diabetes in the world as per recent estimates. Consider the following statement:
    1. It is a chronic condition in which the pancreas produces maximum insulin.
    2. It appear in any age and decreases increased thirst, frequent urination, hunger, fatigue and blurred vision.
    Choose the correct option from codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

65. Consider the following statement regarding Financial Action Task Force (FATF):
    1. The grey countries are designated as jurisdictions under increased monitoring.
    2. Black list means countries designated as high-risk jurisdictions subject to call for action.
    3. Currently, Russia and Venezuala are on the black list.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

66. Which among the following countries was largest importer of Indian broken rice in FY 2021-22?
    a) China   b) Ukraine
    c) Russia   d) Turkey

67. Consider the following statement regarding PARIVESH 2.0:
    1. It is a web-based, role-based workflow application.
    2. It automates the entire tracking of proposals.
    3. The system has an efficient technology-driven workflow.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

68. Consider the following statement:
    1. Rank of Namibia in HDI in 2021 is 130.
    2. Rank of Namibia in World Economic Forum's Global Gender Index 2021 is at the bottom of the list.
    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2 Both   d) None of the above

69. The Ministry of Defence has recently approved the ambitious Tour of Duty (ToD) scheme. Consider the following statement:
    1. Conscription does not refers to the mandatory of youth in the national armed forces.
    2. Countries that follow the practice of conscription include Israel, Norway, North Korea, and Sweden.
    3. 'Agneepath', is a scheme under which the forces will recruit soldiers on a short-term and long-term basis to serve the country.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

70. Recently Scientists have for the first time created "time crystals". Consider the following statement:
    1. It is a macroscopic quantum system in periodic motion in its ground state.
    2. Nobel Laureate Frank Wilczek was the first to theorize time crystals.
    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2 Both   d) None of the above

71. Recently Union Cabinet approved MoA by establishment of BIMSTEC Technology Transfer Facility (TTF). Consider the following statement:
    1. Databank of technologies available in BIMSTEC Countries.
    2. The TTF shall facilitate transfer of technologies among the BIMSTEC Member States.
    3. 5th BIMSTEC Summit was held at Bangladesh in 2022.

    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

72. Recently, the Western Ghats of Maharashtra have yielded a carnivorous land snail. Consider the following statement:
    1. This species is Vulnerable to Mamdapur Conservation Reserve.
    2. The new species also has a unique genital anatomy

    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

73. Recently, the Periodic Labour Force Survey (PLFS) for 2020-21 was released. Consider the following statement and choose the incorrect option:
    a) The unemployment rate saw a decrease of 4.2% in 2020-21.
    b) Rural areas recorded an unemployment rate of 3.3%.
    c) Urban areas recorded an unemployment rate of 6.7%.
    d) The Labour Force Participation Rate increased to 39.8%.

74. Recently, the four holy Kapilvastu relics of Lord Buddha were placed for exposition by India in
    a) Mongolia   b) Japan
    c) Sri Lanka   d) Cambodia

75. Recently, Turkey has warned Greece to demilitarize the Aegean Islands. Consider the following Statement:
    1. Lausanne Treaty of 1923 defined the boundaries of Turkey and Greece.
    2. According to Paris Peace Treaties of 1947, the Dodecanese Islands were given to Turkey.
    3. Greece and Turkey are regional adversaries on the issues concerning the Aegean Sea.

    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

76. Recently, researchers has successfully developed ultrathin monolayer protein films. Consider the following statement:
    1. The protein films consist of Bovine Serum Albumin and Lysozyme.

2. They used the technique called using Langmuir-Blodgett technique, which gives the films thickness in the order of nanometer.
3. These films are much thicker as compared to the other protein or plastic films.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

77. Consider the following statement:
    1. EU imported more than 60% of its gas from Russia.
    2. Egypt, Israel, and the European Union signed a deal to increase liquified natural gas sales to European Union (EU) countries.

    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

78. Recently, the Stockholm International Peace Research Institute (SIPRI) released its yearbook highlighting some worrying trends of the past year in international security. Consider the following statement:
    1. U.S. that has the largest number of deployed nuclear warheads.
    2. Indian currently had more nuclear weapon than Pakistan.
    3. China had more nuclear warhead than France and UK.

    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

79. Recently, the UK. Administration has come up with a new legislation, the Northern Ireland Protocol Bill (NIP). Consider the following statement:
    1. Northern Ireland is the only part of the U.K. that does not shares a land border with the EU.
    2. As per the NIP, goods flowing into Northern Ireland would not be checked at 'sea border' before entering the island.

    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

80. Consider the following statement:
    1. Section 295A define the contours of free speech and its limitations with respect to offences relating to religion.
    2. India have a formal legal framework for dealing with hate speech.

    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

81. Recently, Australian scientists have come up with a model that will help researchers quickly identify soft corals most vulnerable to bleaching from marine heatwaves. Consider the following statement:
    1. Soft coral attach themselves to older skeletons built by their ancestors.
    2. Soft corals also add their own skeletons to the hard structure.
    3. Hard corals extract Magnesium carbonate from the seawater to build hard, white coral exoskeletons.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

82. Recently, the Global Electric Mobility Readiness Index (GEMRIX 2022). Consider the following statement:
    1. China has emerged as the electric vehicle (EV) adoption leader across the globe.
    2. GEMRIX has been calculated for 15 countries in terms of market readiness for EV adoption.
    Choose the correct option from the codes given below:
    a) 1 only   b) 2 Only
    c) 1 and 2   d) None of the above

83. BIS in fulfilling 6 out of 17 United Nations Sustainable Development Goals (SDGs). Which among the following is not among them?
    a) No poverty   b) Zero hunger
    c) Quality Education   d) Gender equality

84. Bitcoin has lost more than two-thirds of its value since it hit a peak in November 2021. Consider the following statement:
    1. Fall in prices of stocks and other assets.
    2. Popping of the bubble that has driven the prices of cryptocurrencies
    3. Driven more by speculative fervour fuelled by easy monetary policy
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

85. There was much debated mystery over the place of origin of Black Death. Consider the following statement:
    1. The disease was caused by bacterium Yersinia pestis and was spread by fleas that were carried by rodent hosts.
    2. Black Death refers to the bubonic plague that spread across Northern Africa only.
    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

86. Recently, the annual Global Trends Report by the UN Refugee Agency (UNHCR) was released. Consider the following statement:
    1. According to the report, 100 million people were forced to flee their homes in 2021 due to violence, human rights abuses, food insecurity, the climate crisis, war in Ukraine.
    2. There were 23.7 million new internal displacements globally due to disasters.
    3. The largest displacements in the context of disasters in 2021 occurred in Ukraine, Afghanistan and Syria.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

87. Consider the following statement:
    1. The border operation called "Solidarity-2023" will be organised by India.
    2. India has supported an initiative by China to conduct a "joint border operation" in 2023.
    Choose the correct option from the codes given below:
    a) 1 Only   b) 2 Only
    c) 1 and 2   d) None of the above

88. Recently, the Reserve Bank of India (RBI) has unveiled the Payments Vision 2025 document. Consider the following statement and choose the incorrect option:
    a) It has proposed enabling of geotagging of digital payment infrastructure.
    b) It also proposed a framework for regulation of all significant intermediaries in payments ecosystem.
    c) End to Cheque Truncation System (CTS).
    d) Creating payment system for processing online merchant payments using internet and mobile banking

89. Recently, the WTO's 12th Ministerial Conference (MC12) concluded at WTO. Consider the following statement:
    1. The WTO finalised a proposal to not restrict supplies of food grains to the United Nations World Food Programme (WFP).
    2. It was also agreed to find a final solution to the issue of continuation of moratorium on imposing customs duties on electronic transmission of goods.
    3. The package adopted by members included a ministerial declaration on the emergency response to food insecurity.
    Choose the correct option from the codes given below:
    a) 1 and 2   b) 2 and 3
    c) 1 and 3   d) 1, 2 and 3

90. Consider the following statement:
    1. Starquakes can be likened to tsunamis or massive vibrations on the surface of stars.
    2. Quasars are extraordinarily active and bright cores of galaxies powered by supermassive black holes.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

91. To curb depletion in ground water levels and reduce power usage, the Punjab government is firming up a plan on crop diversification. Consider the following statement:
    1. A third of water-intensive paddy grown would be gradually shifted to crops such as cotton, maize, oilseeds and pulses, over the next five years.
    2. The state government will also provide incentives to farmers.
    3. These crops will not be procured under Minimum Support Price (MSP).
    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) 1, 2 and 3

92. Recently, scientists have discovered a new species of bamboo-dwelling bat. Consider the following statement and choose the incorrect option:
    a) The new species of bats have been found from Nongkhyllem Wildlife Sanctuary.
    b) Nongkhyllem Wildlife Sanctuary is in Mizoram.
    c) These bats are currently composed of four recognised species from Southeast Asia.
    d) Meghalaya has the highest bat diversity in the country.

93. Recently, Ministry of Electronics and IT (MeitY) has declared NPCI as 'critical information infrastructure'. Consider the following statement:
    1. Critical Information Infrastructure' means a computer resource, whose destruction have debilitating impact on national security, economy, public health or safety.
    2. Any person who secures access or attempts to secure access to a protected system shall be punished with imprisonment of a term which may extend to 10 years.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

94. Researchers from the IIT Mumbai and Kharagpur have built a microscope that can image magnetic fields within microscopic two-dimensional samples. Consider the following statement:

95. Consider the following statement regarding Amrit Sarovar Mission:
    1. It aims at developing and rejuvenating 75 water bodies in each district in all States.
    2. At least 50,000 water bodies are expected to be rejuvenated across the country.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

96. Recently, the Prime Minister launched the historic torch relay for the 44th Chess Olympiad. Consider the following statement:
    1. The 44th Chess Olympiad will be held in India.
    2. In 2018, Chess Olympiad was held in Georgia.
    3. Singapore last hosted Chess Olympiad from Asia in 1992.
    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) 1, 2 and 3

97. Consider the following statement regarding UNESCO's King Hamad Bin Isa Al-Khalifa Prize:
    1. The prize was established with the support of Kingdom of Saudi Arabia.
    2. The prize recognizes innovative approaches in leveraging new technologies.
    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

98. Recently, Chinese scientists have found signs of water on the moon. Consider the following statement:
    1. Scientist had revealed presence of water in the form of hydroxyl.
    2. Hydroxyl comprise of two oxygen and one hydrogen atom.
    3. The water on the moon was the result of chemical processes triggered by the bombardment of charged particles from the sun on the lunar surface.
    Choose the currect option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) None of the above

1. It can measure biological activity of neurons and dynamics of vortices in superconductors.
2. First time tool has been built to image magnetic fields that change within milliseconds.
3. The key aspect of this sensor is a "nitrogen vacancy (NV) defect centre".
Choose the correct option from the codes given below:
a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1, 2 and 3

99. Consider the following statement:
    1. India has decided to import 8-10 cheetahs from South Africa and Namibia.
    2. Kuno Palpur National Park is in Meghalaya.

    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2
    d) None of the above

100. Which among the following project did India failed to deliver on time to Nepal?
    a) Arun Three project
    b) Sutlej Vidhyut Nigam
    c) Upper Karnali project
    d) All the above

101. Who among the following was/were the winner of Prime Minister's Award for Outstanding Contribution towards the Development and Promotion of Yoga for 2021?
    a) Bhikkhu Sanghasena
    b) Marcus Vinicius Rojo Rodrigues
    c) British Wheel of Yoga, United Kingdom
    d) All the above

102. Q: Consider the following statement regarding "NIPUN" project:
    1. The project is an initiative of Minister of Social Justice and Empowerment.
    2. It is a flagship Programme under Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)

    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2 Both
    d) None of the above

103. Consider the following statement regarding recently published annual report on lightning by the Climate Resilient Observing Systems Promotion Council (CROPC):
    1. Madhya Pradesh has reported the largest number of cloud to ground lighting strikes.
    2. Lightning is classified as a natural disaster in India.

    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2 Both
    d) None of the above

104. Recently, two bird strike incidents 1000-kilometre apart prompted the aviation regulator DGCA to shoot off a letter to airports across the country. Consider the following statement:
    1. The Aircraft Rules 1937 prohibit dumping of garbage and slaughtering of animals in a way that could attract birds and animals within a 10 km radius of airports.
    2. Constant surveillance of the airports by their respective wildlife control units is necessary.

    3. Airports can employ various methods to keep birds away from their vicinity.

    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) All the above

105. The Centre has banned the use of 'single-use plastic' from July 1. Consider the following statement:
    1. Single-use plastic including polystyrene and expanded polystyrene are banned.
    2. India rank among the top three country of producing single-use plastic waste generation.
    3. The single-use plastics account for a third of all plastic produced globally.

    Choose the correct option from the codes given below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) All the above

106. Recently, the World Gold Council (WGC) report titled 'Gold refining and recycling' was released. Consider the following statement:
    1. Tax advantages have underpinned the growth of India's gold refining industry.
    2. India topped the global gold recycling chart.

    Choose the correct option from the codes given below:
    a) 1 Only
    b) 2 Only
    c) 1 and 2 Both
    d) None of the above

107. Recently, an expert committee appointed by the National Green Tribunal (NGT) with the mandate to devise a legal framework to regulate noise pollution in Delhi. Consider the following statement:
    1. D Murugesan heads the committee.
    2. There is presently 31 noise monitoring network station in Delhi.
    3. At present, only the Delhi Police can take penal action.

    Choose the correct option from the codes givn below:
    a) 1 and 2
    b) 2 and 3
    c) 1 and 3
    d) 1, 2 and 3

108. Consider the following statement regarding drug resistant typhoid strains and choose the incorrect option:
    a) South Asia accounts for 70% of the global disease burden.
    b) The effectiveness of antibiotics for typhoid fever is threatened by the emergence of resistant strains.
    c) Multi-drug-resistant (MDR) S Typhi has increased in Bangladesh and India.
    d) MDR are being replaced by strains resistant to other antibiotics.

109. A review of a series of exemptions and inverted duty structure was taken up for discussion in the upcoming Goods and Services Tax (GST) Council meeting. Consider the following statement:

1. Decrease in the GST rate on electronics-waste.
2. An increase in rent of hospital rooms with rent over Rs 5,000.
3. Business class travel from airports in the north-eastern states increased by 15 percent.

Choose the incorrect option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

110. Consider the following statement:
1. Venkatachaliah Report recommended that the retirement age of the Judges of the High Court should be increased to 65 years and that of the Judges of the Supreme Court should be increased to 68 years.
2. 110th Amendment Bill made an attempt but lapsed with the dissolution of the 14th Lok Sabha.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

111. Scientists have recorded four species of azooxanthellate corals for the first time from Indian waters. Consider the following statement:
1. Truncatoflabellum crissum, T. incrustatum, T. aculeatum, and T. irregulare are the four species.
2. Azooxanthellate corals are a group of corals that do not contain zooxanthellae.
3. Azooxanthellate corals derive nourishment from Sun.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

112. Consider the following statement regarding Interpol:
1. It is an international arrest warrant.
2. International Criminal Police Organisation, is an inter-governmental body with 194 member countries.
3. It is headquartered in Lyon.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

113. Experts from the Wetlands International suggested five global based conservation efforts to protect and restore wetlands. Consider the following statement and choose the incorrect option:
a) Remaining, undrained peatland carbon stores should be kept intact.
b) 10 per cent increase of west African river Volta in tidal flats area
c) Global wetland cover of 40 per cent.
d) Preservation of free-flowing rivers and flood plains.

114. Consider the following statement:
1. Heat trapping carbon dioxide emissions from making cement have reduced to half in the last 20 years.
2. India produces more than half of the world's cement emissions.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

115. Consider the following statement:
1. Central excise duties and varying State taxes contribute over 50% of the retail price of petrol and diesel.
2. Petrol, diesel, aviation turbine fuel are under the purview of GST.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

116. Consider the following statement:
1. Lac Bangles manufactured in Hyderabad recently applied for GI Tag.
2. The first product in India to be accorded with GI tag was Madhubani paintings.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

117. Recently, a new species of spider discovered from the Thar Desert of Rajasthan. Choose the incorrect option:
a) The new species name is Pseudomogrus sudhii.
b) It is not the first report of this genus from India.
c) This species inhabits dry grass blades of the desert.
d) Head of the female is yellow with black eyes.

118. Recently, the GSAT-24 satellite was launched by India. Consider the following statement:
1. It is a 24-Ku band communication satellite.
2. It was the first "demand driven" communication satellite mission by NSIL.
3. 'Measat-3d', accompanied the GSAT 24.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

119. Consider the following statement regarding the roadmap for reducing fertilizer consumption in India:
1. Reduce consumption of high-analysis fertilisers.
2. Increase the rate at which urea is hydrolysed.
3. By reducing ammonia volatilisation and nitrate leaching.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

120. The government of India announced the launch of the pilot phase of Open Network for Digital Commerce (ONDC). Consider the following statement:
   1. It will standardise operations like cataloguing, inventory management, order management and order fulfilment.
   2. It is initially started in cities of more the 10 lakh population.
   Choose the correct option from the codes given below:
   a) 1 Only   b) 2 Only
   c) 1 and 2 Both   d) None of the above

121. Recently MoRD launched National Mobile Monitoring Software app. Consider the following challenges:
   1. No stable network for real time monitoring.
   2. Uploading attendance on app due to network problem.
   3. Only differently-abled NREGA workers mark their attendance on the app without any challenges.
   Choose the correct option from the codes given below:
   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

122. Recently the National Commission for the Protection of Child Rights (NCPCR) has published draft guidelines to regulate child protection within the entertainment industry. Consider the following statement:
   1. The scope of the new guidelines will not cover TV programmes.
   2. The child artists and children being used in entertainment need to be registered with District Magistrates.
   3. Intermediary Guidelines and Digital Media Ethics Code Rules, 2021 have been included in the guidelines.
   Choose the correct option from the codes given below:
   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

123. Recently, United Nations Secretary-General released the Action Agenda on Internal Displacement. Which among the following is the goal of this agenda?
   a) To help internally displaced persons find durable solutions.
   b) To better prevent future displacement crises.
   c) To ensure stronger protection and assistance for those currently facing displacement.
   d) All the above

124. Consider the following statement:
   1. Invasive species alter the environment they invade.

2. Invasive plant species transform the soil structure and microenvironment.
   Choose the correct option from the codes given below:
   a) 1 Only   b) 2 Only
   c) 1 and 2   d) None of the above

125. Recently DRDO successfully flight tested Vertical Launch Short Range Surface to Air Missile (VL-SRSAM). Consider the following statement:
   1. It is a short-range shipborne weapon system.
   2. It is an Air-to-Air missile.
   Choose the correct option from the codes given below:
   a) 1 Only   b) 2 Only
   c) 1 and 2   d) None of the above

126. Kerala will soon have its own red list of birds. Consider the following statement:
   1. Kerala has 64 threatened species of birds.
   2. The IUCN guidelines for preparing the red list have five main criteria.
   3. Red-headed vulture and White-rumped vulture are endangered.
   Choose the correct option from the codes given below:
   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

127. Consider the following statement:
   1. Rajasthan has four wetlands recognised as Ramsar sites.
   2. Menar in Udaipur district is set to be notified as Rajasthan's new wetland.
   Choose the correct option from the codes given below:
   a) 1 Only   b) 2 Only
   c) 1 and 2   d) None of the above

128. Consider the following statement regarding Zika Virus:
   1. It is a mosquito-borne flavivirus.
   2. It was first identified in Rwanda.
   3. It is transmitted by the bite of infected Aedes aegypti and Aedes albopictus.
   Choose the correct option from the codes given below:
   a) 1 and 2   b) 2 and 3
   c) 1 and 3   d) 1, 2 and 3

129. Consider the following statement regarding role of climate change and Aerosol in excess and deficit rainfall in Assam:
   1. In 2022, Assam received 41% above normal rainfall.
   2. Climate change have increased the water and surface temperature of the Arabian Sea and the Bay of Bengal causing the frequent formation of low-pressure areas and cyclonic circulations, resulting in heavy rains.

3. Rising black carbon emissions, leads to a decrease in low-intensity rainfall while pushing up severe rain in the pre-monsoon season in northeast India.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

130. Consider the following statement regarding Anti Defection Law:
1. 10th Schedule had spoken of a 'split' in a legislature party as an exception.
2. In 10th Schedule disqualification on account of defection will not apply in case of a merger of one party with another.
3. There is a deemed merger only if one-thirds of the party's total strength agrees to the merger.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

131. Consider the following statement regarding the recent held G7 Summit:
1. G7 group announced $600 billion for global infrastructure programmes in poor countries to compete with China's formidable Belt and Road Initiative.
2. Germany holds the presidency of the G7 in 2022.
3. European Union is the member of G7 Group.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

132. Recently Russia has promised its ally Belarus to deliver Iskander missiles. Consider the following statement:
1. This missile carry only conventional warheads.
2. "SS-26 Stone" is the codename used by NATO for this missile.
3. Iskander system was inducted by Russia in 2006.

Choose the correct option from the codes given below:
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

133. The Forest Department in Odisha is experimenting with a siren system to reduce human-elephant encounters. Consider the following statement:
1. The siren system detects elephant herds by its infrared sensor system.
2. There is an in-built programme to identify jumbos from their sizes and other attributes.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

134. Recently China had built a Model Village near LAC. Consider the following statement:
1. Captive solar energy
2. Small hydel power projects
3. Winter sustenance capability

Which among the following is a part of Model Village?
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

135. Consider the following statement regarding India-Vietnam Defence Partnership:
1. India extended $500 million Defence Line of credit to Vietnam.
2. India fails to support Vietnam's position in the South China Sea.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2 Both   d) None of the above

136. Consider the following statement:
1. The India State Support Program for Road Safety, financed by the World Bank.
2. The fund will be implemented in five States and two Union Territories.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

137. Consider the following statement regarding National e-Governance Service Delivery Assessment (NeSDA) Report 2021:
1. Gujarat has been rated a leading state in delivering online services to citizens Grievances.
2. It is an initiative of the Centre's Department of Administrative Reforms and Public Grievances.
3. It covers services in seven sectors.

Choose the correct option from the codes given below:\
a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

138. Consider the following statement:
1. Nagaland was in first position in "North-East and Hill" states in National e-Governance Service Delivery Assessment (NeSDA) Report 2021.
2. Among the Union Territories, Jammu & Kashmir was ranked first in National e-Governance Service Delivery Assessment (NeSDA) Report 2021.

Choose the correct option from the codes given below:
a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

139. Recently, NITI Aayog launched a report titled 'India's Booming Gig and Platform Economy'. Consider the following statement:

1. Gig workers accounts to 1.5% of the total workforce in India.
2. Gig workers are classified into platform and non-platform-based workers.
3. 'Platform India initiative' is an initiative for Gig Workers.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

140. Consider the following statement:
1. UAE invested more in India in 2021 than Germany and France combined.
2. Germany and France are the only two countries in G7 that had signed Comprehensive Economic Partnership Agreement (CEPA) with India.

Choose the correct option from the codes given below:

a) 1 Only   b) 2 Only
c) 1 and 2   d) None of the above

141. China is set to launch the first solar-powered plant in space. Consider the following statement:
1. The solar station will be capable of transporting solar energy to Earth.
2. The Space Solar Power Station is likely to be a hotspot technology.
3. The solar space station aims at converting solar energy into electricity and microwaves.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

142. Consider the following statement regarding Pay Roll Automation for Disbursement of Monthly Allowances (PADMA):
1. It is an automated platform leveraging latest technology, which will provide seamless and timely disbursal of Pay & Allowances Indian Coast Guard personnel.
2. This module has been developed under the aegis of Defense Accounts Department.

Choose the correct option from the codes given below:

a) Only 1   b) Only 2
c) 1 and 2   d) Neither 1 and 2

143. Consider the following statement:
1. In Nabam Rebia v Bemang Felix case Supreme Court upheld the power vested in the Speaker and said that only the final order of the Speaker will be subject to judicial review.
2. Under Article 179 of the Constitution, a speaker can be removed by a resolution of the Assembly passed by a majority of all the then members of the Assembly

Choose the correct option from the codes given below:

a) Only 1   b) Only 2
c) 1 and 2   d) Neither 1 and 2

144. China has been investing across the African continent throughout the last decade. Consider the following statement:
1. China's interests are related to four major areas of infrastructural projects, financial assistance, natural resources and maritime interests.
2. China is building Addis-Djibouti railway line connecting the land-locked country with Eritrean ports in the Red Sea.
3. China has also invested in the Mombasa-Nairobi rail link in Rwanda.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

145. Consider the following statement:
1. Padma Multipurpose Bridge built across the Padma River.
2. Bangladesh confirm to be part of China-led Belt and Road Initiative (BRI).

Choose the correct option from the codes given below:

a) Only 1   b) Only 2
c) 1 and 2   d) Neither 1 and 2

146. Recently Cabinet approves strategic partnership agreement between MNRE and IRENA. Consider the following statement:
1. It aims to drive green energy transitions based on renewable energy in India.
2. It will help India's energy transition efforts in combating climate change.
3. It will help India in achieving fossil fuel electricity by 2025.

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

147. India recently successfully tests high-speed expendable aerial target ABHYAS. Consider the following statement:
1. It is designed & developed by Hindustan Aeronautical Limited.
2. A small gas turbine engine powers it.
3. The target aircraft is equipped with Micro-Electromechanical Systems-based Inertial Navigation System

Choose the correct option from the codes given below:

a) 1 and 2   b) 2 and 3
c) 1 and 3   d) 1, 2 and 3

148. Scientists recently come up with a new way to replicate the process of photosynthesis without sunlight. Consider the following statement:

1. Photosynthesis is a process that converts sunlight into energy.
2. Electro catalytic process convert carbon dioxide, electricity, and water into acetate.

Choose the correct option from the codes given below:

a) 1 Only
b) 2 Only
c) 1 and 2 Both
d) None of the above

149. India develops it first homegrown mRNA Covid-19 vaccine. Consider the following statement:
1. mRNA vaccine was the first to enter human trials globally.
2. The technology uses genetically engineered mRNA to instruct cells to make the S-protein found on the surface of the Covid-19 virus.
3. After vaccination, the muscle cells begin making S-protein pieces and displaying them on cell surfaces.

Choose the correct option from the codes given below:

a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1, 2 and 3

150. Consider the following statement:
1. Finland and Sweden share Baltic Sea with Russia.
2. Sweden share land border with Russia.

Choose the correct option from the codes given below:

a) 1 Only
b) 2 Only
c) 1 and 2 Both
d) None of the above

ANSWER KEY

1.	(d)	2.	(c)	3.	(d)	4.	(a)	5.	(b)	6.	(a)	7.	(d)	8.	(d)	9.	(b)	10.	(c)
11.	(d)	12.	(b)	13.	(a)	14.	(c)	15.	(c)	16.	(d)	17.	(c)	18.	(a)	19.	(b)	20.	(d)
21.	(a)	22.	(d)	23.	(a)	24.	(b)	25.	(c)	26.	(a)	27.	(b)	28.	(c)	29.	(d)	30.	(a)
31.	(a)	32.	(b)	33.	(c)	34.	(d)	35.	(c)	36.	(a)	37.	(b)	38.	(c)	39.	(d)	40.	(a)
41.	(a)	42.	(b)	43.	(c)	44.	(d)	45.	(a)	46.	(a)	47.	(b)	48.	(c)	49.	(d)	50.	(a)
51.	(a)	52.	(b)	53.	(c)	54.	(d)	55.	(a)	56.	(a)	57.	(b)	58.	(c)	59.	(d)	60.	(b)
61.	(a)	62.	(b)	63.	(c)	64.	(d)	65.	(a)	66.	(a)	67.	(d)	68.	(a)	69.	(b)	70.	(c)
71.	(a)	72.	(b)	73.	(d)	74.	(a)	75.	(c)	76.	(a)	77.	(b)	78.	(c)	79.	(d)	80.	(a)
81.	(a)	82.	(b)	83.	(c)	84.	(d)	85.	(a)	86.	(a)	87.	(b)	88.	(c)	89.	(d)	90.	(c)
91.	(a)	92.	(b)	93.	(c)	94.	(d)	95.	(c)	96.	(a)	97.	(b)	98.	(c)	99.	(a)	100.	(c)
101.	(d)	102.	(b)	103.	(a)	104.	(d)	105.	(c)	106.	(a)	107.	(b)	108.	(c)	109.	(d)	110.	(a)
111.	(a)	112.	(b)	113.	(c)	114.	(d)	115.	(a)	116.	(a)	117.	(b)	118.	(d)	119.	(c)	120.	(a)
121.	(a)	122.	(b)	123.	(d)	124.	(c)	125.	(a)	126.	(a)	127.	(b)	128.	(c)	129.	(d)	130.	(a)
131.	(a)	132.	(b)	133.	(c)	134.	(d)	135.	(a)	136.	(a)	137.	(b)	138.	(c)	139.	(d)	140.	(a)
141.	(d)	142.	(c)	143.	(b)	144.	(a)	145.	(a)	146.	(a)	147.	(b)	148.	(c)	149.	(d)	150.	(a)

PRACTICE QUESTION FOR UPSC MAINS EXAM

1. Recently, the Supreme Court invoked Article 142 of the Constitution to usurp the power of the Governor of the State under Article 161. Evaluate the constitutionality of the decision in the context of Article 142 of the Indian Constitution?

2. Discuss how recent judgement of the Supreme Court in Manoj and Ors. vs State of MP indicates a shift towards an evidence-based inquiry to death sentencing?

3. Discuss whether those who have been implicated in false cases should be compensated? Also discuss reasons for wrongful and malicious prosecution, the role of investigating officers and agencies along with the judiciary.

4. 'The quality higher education and research is crippling under burden of tuition fees globally and in particular India'. Discuss the prevailing issue and suggest a roadmap for an inclusive and quality higher education in India.

5. As Karnataka took further steps towards the realisation of the Mekedatu dam, discuss issue that has been a bone of contention between the two riparian States that have also historically fought over the sharing of Cauvery water.

6. 'Indo-Pacific Economic Framework (IPEF) is a critical part of the US President's plan to counter China's growing influence in the Asian economic sphere. While IPEF's success or failure is far ahead in the future, it is clear that at present, it poses a particularly tough challenge to India'. Comment.

7. 'The year 2022 marks the completion of 25 years of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). The idea behind the formation of this grouping was to remedy the lack of connectedness between South Asia and Southeast Asia'. Critically analyse the role of BIMSTEC highlighting its potential and challenges.

8. Napoleon famously said, "Let China sleep; when she awakens, she will rock the mountains." Comment

9. 'India should not press brakes on its Afghan policy and should seize the important strategic and security opportunities offered by Afghanistan'. Elaborate

10. The Indus Waters Treaty is an illustration of a long-standing engagement between the conflicting nations that has stood the vagaries of time. Discuss how it offers great potential for cooperation and development in the subcontinent, which can go a long way in ensuring peace and stability.

11. The relationship between India and the Gulf nations has remained strong through decades. Given the recent issue over comments made regarding Prophet Mohammed, the Gulf Countries would not want their India policies to be determined by theological considerations; both have an array of interests at stake. Discuss

12. 'Despite the stringent anti-defection laws, cross-voting or floor crossing is going on. The anti-defection law must be amended to rectify the loopholes'. Comment.

13. Analyse the impact of the changing dynamics and the humanitarian crisis on the rights of Afghan women and girls.

14. Analyse the factors outside agriculture to be responsible for recent food crisis, with lessons for the world and in food system management.

15. 'Increasing the age of marriage without a commensurate improvement in women's education is least likely to yield better health and nutritional outcomes'. Analyase the above statement with help of relevant data.

16. Elaborate how present economic crisis in Sri Lanka offers an opportunity to India to forge closer ties with island nation with the help of infrastructure and economic development in the region.

17. Discuss the recently launched Agnipath scheme for recruitment of soldiers in the three branches of the armed forces.

18. 'In 21st century, when people of all genders are leading the world with compassion, strength and ambitions, the Indian Parliament needs to reflect on its standing'. Comment.

19. Discuss how besides surface warming, ocean stratification and warming below the surface fueled super cyclone Amphan?

20. 'India needs to adopt a rigorous dashboard approach to indicators, assigning high weight to the environment, modelled on the Sen, Stiglitz and Fitoussi proposal made in their exploration of development beyond GDP'. Discuss and Comment.

21. Recently, India proposed the inclusion of a provision in an international treaty for criminalising "offensive messages" at the United Nations. India's proposal reflects the provisions of Section 66A of the Information Technology (IT) Act. Discuss the constitutional and commercial implications if India's proposal is accepted.

22. AI-related technologies have become part and parcel in every sphere but it is a recognised fact that they cannot continue to operate without a common rulebook. In this context, discuss why right incentives for ethical AI governance need to be established in national and sub-national policy?

23. 'Caste shaped policy outcomes, including India's highly unequal land reform and lack of public provision of education and health, in turn erected barriers to its economic diversification in comparison to countries in global South'. Elaborate.

24. 'The need of the hour is to adopt agro-ecological practices that create sustainable food production systems'. Discuss the above the statement in context of India keeping in mind the unprecedented increase in soil degradation.

25. 'The need of the hour is to acknowledge the significance of responsible gaming and develop a regulatory framework defined by progressive policies to monitor and mitigate the possibility of irresponsible gaming in India'. Comment

26. 'In India, anti-defection law needs to be re-examined as it is not equipped in its present form to prevent rampant misuse of its provisions'. Do you agree with this statement? If yes, give reasons to support your answer.

27. MSME sector is backbone of the Indian economy with high degree of informality in the sector. Discuss a roadmap to fully unlock emerging opportunities for MSMEs in the rapidly changing global value chain ecosystem.

28. 'Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime'. In the light of above statement, discuss the growing freebie culture in Indian elections and a suitable way forward.

29. 'In order to ensure the smooth functioning of democracy the voice of prisoners is also important. Instead of disenfranchising only certain classes of prisoners, the law prohibits anyone in confinement from voting'. Comment.

30. 'The ongoing India-Afghan engagement present both challenges and opportunities for Indian foreign policy in Afghanistan'. Comment.

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