

Q: Consider the following statement regarding Endogenous retroviruses:

1. It enter a host cell and introduce their RNA, which is converted to DNA.
2. It typically infect cells that do not pass from generation to generation.
3. It makes up about 15 per cent of the human genome.

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

Ans: a

Explanation:

- Endogenous retroviruses make up about 8 per cent of the human genome, which is more than four times the amount of DNA that makes up the genes that code for proteins.
- Retroviruses enter a host cell and introduce their RNA, which is converted to DNA and integrated into the host's genome. The cell then replicates the virus in accordance with the genetic instructions.
- To replicate itself, the virus hijacks the cell's transcriptional machinery.
- Retroviruses typically infect cells that do not pass from generation to generation, but some infect germ cells, such as an egg or sperm, allowing retroviral DNA to pass from parent to offspring and eventually become permanent fixtures in the host genome.

Q: Consider the following statement regarding C-295 transport aircraft:

1. This aircraft cannot operate from short or unprepared airstrips.
2. For the first time, the Airbus C-295 aircraft will be manufactured outside of Europe.
3. It is a new-generation tactical airlifter in the light and medium segment.

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

Ans: b

Explanation:

- Recently, the Prime Minister announced that the Indian Air Force's C-295 transport aircraft will be manufactured by a consortium led by Tata group and Airbus in Gujarat's Vadodara.
- For the first time, the Airbus C-295 aircraft will be manufactured outside of Europe. This is very significant for the domestic aerospace sector.
- The C-295 is a new-generation tactical airlifter in the light and medium segment. This plane will replace the IAF's ageing Avro Hawker Siddeley HS748 aircraft of the Indian Air Force. The Avro has been in the IAF fleet since the 1960s.
- The C295 is known to be a superior aircraft used for tactical transport of up to 71 troops or 50 paratroopers, and for logistic operations to locations that are not accessible to current heavier aircraft.
- It has a maximum speed of 480 kmph.
- Moreover, the C-295 Short take-off and landing (STOL) capability combined with a strong landing gear enable it to operate in the most austere locations with the worst conditions for take-off and landings. This means it can operate from short or unprepared airstrips.

Q: Consider the following statement:

1. Heat-related deaths increased by 68 per cent worldwide.
2. Food security was affected by climate change because higher temperatures threatened crop yields.

Choose the correct option from the codes given below:

- a) 1 Only

- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- According a recent report launched by Lancet Countdown, heat-related deaths increased by 68 per cent between 2000-2004 and 2017-2021, while vulnerable populations were exposed to 3.7 billion more heatwave days in 2021 than annually in 1986-2005.
- Food security was affected by climate change because higher temperatures threatened crop yields directly with the growth seasons of maize on average nine days shorter in 2020 and the growth seasons of winter wheat and spring wheat six days shorter than for 1981-2010 globally.

Q: Consider the following statement:

1. Emissions of India are about half of the G20 average.
2. India's contribution to cumulative CO2 emissions is three per cent.
3. The EU and US are one of the largest producer of fossil CO2 emission.

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

Ans: d

Explanation:

- Emissions of India are about half of the G20 average, whereas Saudi Arabia reaches more than twice the G20.
- India's contribution to historical cumulative CO2 emissions (excluding LULUCF) is three per cent, whereas the US and the EU have contributed 25 per cent and 17 per cent respectively to total fossil CO2 emissions from 1850 to 2019.
- China contributed 13 per cent, the Russian Federation seven per cent, and Indonesia and Brazil one per cent each. Least developed countries contributed only 0.5 per cent to historical CO2 fossil fuel and industry emissions between 1850 and 2019.

Q: Consider the following statement regarding issue of child nutrition in India:

1. According to WHO and UNICEF, breastfeeding should be initiated within the first hour of birth.
2. Infants of Chhattisgarh, Jharkhand and Madhya Pradesh are not breastfed within the first hour of birth.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: a

Explanation:

- NFHS provides estimates of underweight, (low weight for age), stunting (low height for age) and wasting (low weight for height).
- These conditions affect preschool children (those less than 6 years of age) disproportionately and compromise a child's physical and mental development while also increasing the vulnerability to infections.
- The WHO and UNICEF recommend that breastfeeding should be initiated within the first hour of birth and infants should be exclusively breastfed for the first six months.
- NFHS says that only 42 per cent of infants are breastfed within one hour of birth, which is the recommended norm. Interestingly, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and Maharashtra, Manipur, Rajasthan,

Himachal Pradesh, and Haryana score above 70 per cent whereas the ones below 50 per cent include Bihar, Punjab, Kerala, Tamil Nadu, and West Bengal. The others are in between.