

Q: Consider the following statement:

1. Belarus shares borders with three NATO members.
2. Belarus is not a member of Eurasian Economic Union.

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:

- Belarus is a member of the Russian-led military alliance, the Collective Security Treaty Organization, as well as the Eurasian Economic Union. Russia leases two military installations in Belarus, both inherited from Soviet times.
- Moreover, Belarus gets subsidised oil and natural gas imports from Russia. As was the case with Ukraine, Russia wants to keep Belarus in its sphere of influence and therefore supports the regime of Belorussian President Alexander Lukashenko which is seen as friendly by Russia.
- Belarus' geo-strategic position, between Russia and Ukraine and between Russia and Poland, makes it very important for Russia.
- It also shares borders with three NATO members; Lithuania, Latvia, and Poland.

Q: Consider the following statement regarding land use, land-use change and forestry (LULUCF):

1. This emissions during 1851-2021 show a steady increase in several European countries.
2. This sector accounted for 38 per cent of the total warming from CH₄ emissions.
3. CH₄ and N₂O emissions are more uncertain than that of fossil CO₂.

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:

- The land-use and forestry sector is a significant contributor in half the countries.
- CO₂ emissions from land use, land-use change and forestry (LULUCF) in Brazil led to 0.04°C of warming.
- LULUCF emissions also dominate Indonesia's contributions to warming through historical CO₂ emissions, the study read.
- In contrast, LULUCF emissions during 1851-2021 were negative in several European countries.
- Also, the LULUCF sector accounted for 38 per cent of the total warming from CH₄ emissions and 72 per cent from N₂O emissions between 1851-2021.
- The contribution of India, China and Brazil towards warming due to CH₄ and N₂O increased by 110 per cent, 56 per cent and 55 per cent, respectively, compared to CO₂-related warming alone.
- The researchers, however, highlighted that CH₄ and N₂O emissions are more uncertain than that of fossil CO₂.

Q: Consider the following statement:

1. Vanadium is used in manufacturing medical implants and batteries.
2. Glauconite is a common source of potassium in fertilisers.

Choose the correct option from the codes given below:

- e) 1 Only
- f) 2 Only
- g) 1 and 2
- h) None of the above

Ans: c

Explanation:

- Vanadium-bearing magnetite ilmenite was found northeast of Patalganga and east of Sapneri village in Gaya and Jehanabad over a 2 sq km area.
- Vanadium is used in manufacturing steel, pipes, superconducting magnets, medical implants and batteries.
- The state government has also lined up two mines, worth Rs 14,048 crore, of glauconite -- a common source of potassium in fertilisers, in Pipradih and Chutia-Nauhatta blocks of Rohtas for auction.

Q: Consider the following statement regarding crystalline silicon (c-Si) technology:

1. India's solar PV installations are dominated by this technology.
2. A c-Si module mainly consists of a glass sheet.
3. The thin-film module is made of glass, encapsulant, and compound semiconductors.

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:

- India's solar PV installations are dominated by crystalline silicon (c-Si) technology. A typical PV panel is made of c-Si modules (93%) and cadmium telluride thin-film modules (7%).
- A c-Si module mainly consists of a glass sheet, an aluminium frame, an encapsulant, a backsheet, copper wires, and silicon wafers. Silver, tin, and lead are used to make c-Si modules. The thin-film module is made of glass, encapsulant, and compound semiconductors.

Q: Consider the following statement regarding Tree City of the World (TCW):

1. It recognises efforts of cities globally that strive to balance the trees and environment.
2. United Nation Environmental Programme (UNEP) conduct this programme.

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:

- The United Nations Food & Agriculture Organisation (FAO) and Arbor Day Foundation (ADF) conduct the Tree City of the World (TCW) programme and in the past 50 years, the ADF has planted more than 35 crore trees worldwide, with a target of 50 crore more trees by 2027.
- Since 2019, the TCW was implemented to recognise efforts of cities globally that strive to balance the trees and environment and are included in the TCW list.
- The Arbor Day Foundation is a nonprofit conservation and education organization founded in 1972 in Nebraska, United States, by John Rosenow.
- It is the largest nonprofit membership organization dedicated to tree planting.