

Q: Consider the following statement:

1. The Sun has two layers, the inner and outer layer.
2. The inner layer consists of Core, Radiative Zone, and Convection Zone.
3. Visible Line Emission Coronagraph (VLEC) will focus on core.

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:

- ISRO received the Visible Line Emission Coronagraph (VLEC) on Republic Day to be integrated into the Aditya L-1 mission, bringing it one step closer to the mission launch.
- The coronagraph is one of the most advanced instruments and the biggest on the Aditya L-1 mission. It will be used for imaging and spectroscopy of the Sun to better understand the science powering the star.
- The Sun has two layers, the inner layers - Core, Radiative Zone, and Convection Zone. The outer layers are the Photosphere, the Chromosphere, the Transition Region, and the Corona. While instruments have diagnosed the inner layers, it is the outer layer that remains a challenge to understand.
- VLEC will focus on this outer layer, specifically on the Corona, which starts 2,100 km above the solar surface with a temperature raging around 5,00,000 degrees Celsius.

Q: Consider the following statement:

1. World Economic Outlook is released by World Bank.
2. The world economy will grow 2.9% in 2023 as per World Economic Outlook report.
3. The IMF now expects China's economy to grow 5.2% in 2023.

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 International Monetary Fund (IMF) released its latest World Economic Outlook forecasts.
- It now **expects the world economy to grow 2.9% in 2023**. That forecast is better than the 2.7% expansion for 2023 that the IMF predicted in October, though down from the estimated 3.4% growth in 2022.
- Chinese and Indian economies will supply over 50% of global growth in 2023.
- The IMF now expects China's economy to grow 5.2% in 2023, up from its October forecast of 4.4%.
- At the same time, India's outlook remains robust, with unchanged forecasts for a dip in 2023 growth to 6.1% but a rebound to 6.8% in 2024, matching its 2022 performance.

Q: Consider the following statement:

1. India's solar module manufacturing capacity is expected to reach approximately 95 GW by the end of 2025.
2. The PLI programme is an added push to enhance vertical integration of new capacity additions and technology used.

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:

- India's solar module manufacturing capacity is expected to reach approximately 95 GW by the end of 2025, according to Mercom Capital.
- The solar module manufacturing capacity as of September 2022 was 39 gigawatt (GW).
- The PLI programme is an added push to enhance vertical integration of new capacity additions and technology used.
- With an estimated 220 GW of solar capacity required by the end of the decade, India needs significant manufacturing capacity ramp up.

Q: Recently, the Delhi Chief Minister launched a study to gather realtime information on sources of pollution. Consider the following statement:

1. By getting information about the real-time pollution sources.
2. The system will also forecast major factors of pollution in the coming days.
3. The data also shows that vehicular pollution contributes around 17-18 per cent of the total pollution.

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:

- By getting information about the real-time pollution sources, the government will be able to tackle the problem in a more targeted way.
- The system will also forecast major factors of pollution in the coming days. It can forecast on an hourly basis for the next three days.
- The system will also provide information on how much pollution is generated in Delhi and how much comes from outside Delhi.
- The data also shows that vehicular pollution contributes around 17-18 per cent of the total pollution and this is constant through winters.

Q: Consider the following statement regarding the violation of Article 8 and 9 of Indus Water Treaty:

1. Article 8 specifies the roles and responsibilities of the Permanent Indus Commission.
2. Article 9 provides for the appointment of a neutral expert in case there is a lack of consensus among the Commissioners.
3. Pakistan claim, India has violated the dispute settlement mechanisms.

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:

- India has attributed the “material breach” to Pakistan’s unilateral decision to approach the Permanent Court of Arbitration, bypassing the mandate of Indus Commissioners. The arbitration proceedings started on January 27. India boycotted this hearing.
- India claims that Pakistan has violated the dispute settlement mechanisms, as mandated by Articles 8 and 9 of the Treaty.
- Article 8 specifies the roles and responsibilities of the Permanent Indus Commission, a regular channel of communication for matters relating to the implementation of the Treaty. Article 9 is relevant for addressing any difference or dispute that might emerge between the two countries.
- Article 9 offers a graded pathway to address any issue related to the implementation or interpretation of the IWT, for instance, it provides for the appointment of a neutral expert in case there is a lack of consensus among the Commissioners.