

Q: Consider the following statement regarding Pulsed Current Effects:

1. It is applied between the coated component.
2. It acts as a cathode and non-consumable anode.
3. It cannot be used for nano-crystalline coatings.

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:

- The pulsed current is applied between the components to be coated, acting as cathode and non-consumable anode.
- The pulsed current effect was used for nano-crystalline coatings wherein high instantaneous current density for very small duration resulted in high rate of nucleation.
- Unlike in conventional direct current plating, the coatings were virtually porosity free, crack free with minimal hydrogen uptake.

Q: Consider the following statement regarding the seismic activity of Joshimath:

1. Joshimath falls under the Moderate Damage Risk Zone (Zone 3).
2. Seismic energy generation due to micro-earthquakes, weakened the strength of the rocks.
3. Climatic factors such as excessive precipitation and flow of water from mountains lead to widening of cracks on the surface of the rock.

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 seismic microzonation study for the area would generate risk resilient parameters for safer dwellings and infrastructure.
- They said Joshimath falls under the highest seismic hazard Zone V as it experiences continuous seismogenic stresses.
- Seismic energy generation due to micro-earthquakes may have weakened the strength of the rocks as Joshimath is located in the earthquake rupture zone of the 1999 Chamoli earthquake.
- Climatic factors such as excessive precipitation and flow of water from mountains into massive cracks and fractures in the sub-surface rocks lead to widening of cracks and hastening the slip in rock material.

Q: Consider the following statement regarding RBI Act:

1. Section 26(2) of the Reserve Bank of India Act, 1934, gives powers to the Centre to notify that a particular denomination of currency ceases to be legal tender.
2. Section 3 deals with establishment and incorporation of Reserve Bank.

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:

- Section 26(2) of the Reserve Bank of India Act, 1934 essentially gives powers to the Centre to notify that a particular denomination of currency ceases to be legal tender.
- Here, Parliament, which enacted the RBI Act, is essentially delegating the power to alter the nature of legal tender to the central government.
- The Attorney General for India argued that the RBI Act itself has guidance for exercise of delegated powers. He cited the Preamble and Section 3 of the Act as guidance on the purpose of the law and the Centre's role in "regulating" monetary policy.
- Section 3 deals with establishment and incorporation of Reserve Bank.

Q: Consider the following statement regarding 'Textiles conclave' during the Sangamam:

1. Government's vision of raising textiles exports to \$100 billion by 2030.
2. India's textiles market is expected to grow at a CAGR of 12-13% to nearly \$2 trillion by 2047.
3. PM Modi's 5F formula (farm, fibre, fabric, fashion, foreign) will accelerate growth in the sector.

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:

- The government organised a 'textiles conclave' during the Sangamam. Several eminent personalities of different segments of the textile industry from Tamil Nadu and Kashi shared their experiences and exchanged ideas at a session on Amrit Kaal Vision 2047.
- They were excited and confident about the government's vision of raising textiles exports to \$100 billion by 2030 and creating new opportunities in the sector.
- The textiles sector, which has great job-creating potential, is a key part of mission to become a developed country by 2047. India's textiles market is expected to grow at a CAGR of 12-13% to nearly \$2 trillion by 2047, while exports from the sector are expected to grow at double digits.
- PM Modi's 5F formula (farm, fibre, fabric, fashion, foreign) will accelerate growth in the sector and transform the lives of farmers and weavers. Kashi and Tamil Nadu have a key role to play to achieve this vision.
- The government is also encouraging technical textiles, which have phenomenal potential. These products include functional textiles that are used in vehicles, protective clothing, bulletproof vests and construction. Man-made fibre, also an area of focus, has great potential for growth and exports.

Q: Consider the following statement regarding Blackbucks:

1. It is found only in the Indian subcontinent.
2. Female blackbucks have corkscrew-shaped horns.

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:

- Blackbucks found only in the Indian subcontinent are mostly seen in three broad clusters across India that pertain to the northern, the southern, and the eastern regions.
- While the males have corkscrew-shaped horns and black-to-dark brown coats, the females are fawn-coloured.