

# Solutions

DATE : 16<sup>th</sup> Dec – 22<sup>nd</sup> Dec

**1) Answer: b) Only two**

- Statement 2: Correct. Chief Ministers and Union Territory representatives are part of NITI Aayog.
- Statement 3: Correct. Up to four Union Ministers are ex-officio members.
- Statement 1: Incorrect. The Vice-Chairperson is nominated by the Prime Minister, not elected by Parliament.

**2) Answer: c) The Great Man-Made River project for water supply**

- Libya lacks natural perennial rivers or lakes. The Great Man-Made River is an extensive artificial water supply project crucial for its arid region.

**3) Answer: c) Statement-I is correct but Statement-II is incorrect**

- H5N1 is zoonotic, capable of jumping from animals to humans. However, human-to-human transmission is rare, preventing widespread outbreaks.

**4) Answer: d) Rare, preventable incidents in healthcare resulting in severe consequences**

- "Never Events" include preventable medical errors like wrong-site surgeries, emphasizing strict safety protocols to prevent them.

**5) Answer: a) Whether coconut oil should be classified as edible oil or hair oil for taxation**

- The case debated the classification of coconut oil for GST rates. Edible oil is taxed at 5%, while hair oil attracts 18%.

**6) Answer: b) Only two**

- Statement 1: Incorrect, as IRIS2 involves EU states, not all UN members.
- Statements 2 & 3: Correct; it complements Copernicus and Galileo and strengthens EU's space autonomy.
- Statement 4: Incorrect; IRIS2 focuses on secure connectivity, not climate observation.

**7) Answer: d) None**

- All statements are incorrect. GLP-1 receptor agonists are for type 2 diabetes and obesity, promote weight loss, and reduce cardiovascular risks.

**8) Answer: a) It is India's first fully solar-powered border village**

- Masali village under PM Suryaghar Yojana showcases renewable energy adoption in strategic border areas.

**9) Answer: c) Only three**

- Statement 1: Correct; the museum is the world's largest.
- Statement 2: Correct; it reuses heritage buildings.
- Statement 4: Correct; India collaborates with France on design.
- Statement 3: Incorrect; it integrates ancient and contemporary narratives.

**10) Answer: b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I**

- Antivirals treat H5N1 infections, and cooking eliminates the virus, but these are independent preventive measures.

**11) Answer: b) Only two**

- **Explanation:**
  - **Statement 1:** Correct. NCMEI is a quasi-judicial body with civil court powers.
  - **Statement 2:** Incorrect. It addresses both religious and linguistic minorities.
  - **Statement 3:** Correct. It has the authority to provide no-objection certificates for minority educational institutions.

**About NCMEI:**

- Established in 2004 under the Ministry of Education.
- Promotes educational rights of religious and linguistic minorities under Article 30(1).

**12) Answer: c) It has no risk of capital loss even if gold prices fall.**

- **Explanation:** While SGB eliminates risks like theft and purity concerns, it does not shield against market price fluctuations.

**About Sovereign Gold Bond (SGB) Scheme:**

- Launched: 2015.
- Periodic interest: 2.5% per annum.
- Benefits: Capital gains tax exemption on redemption.

**13) Answer: d) Track their movement, habitat use, and migratory patterns.**

- **Explanation:** Tagging under Project Dolphin helps understand the dolphins' movement, migratory patterns, and habitat use for effective conservation.

**About Ganges River Dolphin Tagging:**

- Conducted by the Wildlife Institute of India under Project Dolphin.
- Supported by MoEFCC to conserve endangered species.

**14) Answer: b) 2 only**

- **Explanation:**
  - **Statement 1:** Incorrect. Hydrothermal vents are found in deep oceans, not shallow coastal waters.
  - **Statement 2:** Correct. Vents emit mineral-rich plumes containing elements like copper, cobalt, and zinc.
  - **Statement 3:** Incorrect. Organisms near vents rely on chemosynthesis, not photosynthesis.

### About Hydrothermal Vents:

- Found near tectonic plate boundaries.
- Emit superheated, mineral-rich water plumes.

15) **Answer: a) Only one**

- **Explanation:**
  - **Statement 1:** Incorrect. Sacred groves are preserved by local communities, not state forest departments.
  - **Statement 2:** Correct. These groves aid aquifer recharge due to their association with water bodies.
  - **Statement 3:** Incorrect. Found among various communities, not just tribal populations.

### About Sacred Groves:

- Found across India.
- Include temple groves and burial ground groves.

16) **Answer: d) None**

- **Explanation:**
  - **Statement 1:** Incorrect. NCRB supports CCTNS, but its implementation is managed by state police departments.
  - **Statement 2:** Incorrect. NCRB does not publish a National Economic Crimes Report.
  - **Statement 3:** Incorrect. NCRB does not provide forensic investigation support.

### About NCRB:

- Functions as a repository of crime and criminal data.
- Publishes "Crime in India" and other reports.

17) **Answer: d) None of the above**

- **Explanation:**
  - **Statement 1:** Incorrect. CCTNS integrates police databases, not paramilitary or other law enforcement agencies.
  - **Statement 2:** Incorrect. CCTNS is under the Ministry of Home Affairs, not the Ministry of Electronics and IT.
  - **Statement 3:** Incorrect. CCTNS does not use blockchain technology.

### About CCTNS:

- Launched in 2009 to integrate crime and criminal tracking.
- Nodal agency: NCRB.

18) **Answer: c) Statement-I is correct, but Statement-II is incorrect.**

- **Explanation:**
  - **Statement I:** Correct. HLVM-3 is a human-rated version of LVM3 for the Gaganyaan mission.
  - **Statement II:** Incorrect. The Crew Escape System operates only until atmospheric flight separation.

### About HLVM-3:

- Three-stage design with enhanced reliability.
- Includes Crew Escape System for astronaut safety.

19) **Answer: c) Examine specific issues like legislation or policies in detail.**

- **Explanation:** JPC is an ad-hoc and bipartisan committee constituted for detailed examination of specific legislative or policy issues.

### About JPC:

- Formed under the Rules of Procedure and Conduct of Business in Lok Sabha.
- Comprises members from both Houses of Parliament.

20) **Answer: b) 2 only**

- **Explanation:**
  - **Statement 1:** Correct. NCMEI has appellate jurisdiction as per Supreme Court rulings.
  - **Statement 2:** Incorrect. It operates under the Ministry of Education, not the Ministry of Minority Affairs.

### About NCMEI:

- Quasi-judicial body safeguarding minority educational rights.
- Provides no-objection certificates to minority institutions.

21) **Answer: c) All three**

### Explanation:

- Statement 1: Correct. Kisan Kavach is a washable and reusable bodysuit for farmers.
- Statement 2: Correct. It employs nucleophilic hydrolysis to deactivate pesticides upon contact.
- Statement 3: Correct. Developed by BRIC-inStem, Bangalore, in collaboration with Sepio Health Pvt. Ltd.

### About Kisan Kavach:

- Aim: Protect farmers from pesticide toxicity.
- Features: Durable for up to a year, priced at ₹4,000, promotes sustainable agriculture.

22) **Answer: d) Cold waves are included under National Policy on Disaster Management (NPDM), enabling relief measures for affected populations**

### Explanation:

- Cold waves are declared as disasters under NPDM. Relief measures include protection for vulnerable populations and economic activities like agriculture.

### Impacts of Cold Waves:

- **Human Health:** Hypothermia, respiratory issues.
- **Agriculture:** Damage to crops like wheat and mustard.
- **Transport:** Disruption due to dense fog.

23) **Answer: c) 3 only**

### Explanation:

- Statement 1: Incorrect. Uttar Pradesh leads in sugarcane production. Maharashtra leads in sugar production due to better recovery rates.
- Statement 2: Incorrect. Sugarcane is more water-intensive than rice and wheat.
- Statement 3: Correct. Ethanol from sugarcane is used as a biofuel under India's ethanol-blending program.
- Statement 4: Incorrect. Sugarcane has specific harvesting seasons, differing by region.

24) **Answer: a) Western Ghats**

### Explanation:

Wroughton's Free-tailed Bat is historically found in the Western Ghats, northeastern India (Meghalaya), and Cambodia.

### Conservation Status:

- **IUCN Status:** Critically Endangered.

- **Threats:** Habitat loss and limited population.

**25) Answer: c) Euphrates River**

**Explanation:**

- The Euphrates River is not near the Golan Heights.
- **Geographic Features:** Sea of Galilee, Wadi Al-Ruqqād, and Yarmūk River are boundaries of the Golan Heights.

**Significance:**

- Strategic security for Israel.
- Agricultural importance and water resources.

**26) Answer: b) Only two**

**Explanation:**

- Statement 1: Incorrect. The Arctic tundra includes small shrubs.
- Statement 2: Correct. Found between 66.5°N and 75°N latitude.
- Statement 3: Correct. Acts as a cooling agent by reflecting solar radiation.

**About Arctic Tundra:**

- Home to mosses, lichens, grasses, and small shrubs.
- Stores over 6 trillion metric tonnes of carbon in permafrost soils.

**27) Answer: a) 2 only**

**Explanation:**

- Statement 1: Incorrect. Cold waves occur due to weak or absent western disturbances.
- Statement 2: Correct. Radiative cooling at night leads to rapid temperature drops.
- Statement 3: Incorrect. Cold waves are rare in southern coastal regions due to the moderating influence of the sea.

**Geographic Reasons:**

- Snowfall in the Himalayas.
- Clear skies enhance radiative cooling.

**28) Answer: a) Only one**

**Explanation:**

- Statement 1: Incorrect. Fir trees grow in mid-to-high altitudes (2,500–3,700 meters) in the Himalayas.
- Statement 2: Incorrect. Fir trees are evergreen and retain foliage year-round.
- Statement 3: Correct. Commonly found in Himalayan mid-to-high altitudes.

**About Fir Trees:**

- Adapted to colder climates with moderate moisture.
- High water-use efficiency.

**29) Answer: d) Ash mounds from ritualistic burning**

**Explanation:**

- Neolithic sites are characterized by ash mounds, indicating early agricultural and ritualistic practices.

**Examples:**

- Sangankallu (Karnataka): Known for ash mounds.
- Burzahom (Kashmir): Known for pit dwellings and burial sites.

**30) Answer: b) 1, 2, and 3 only**

**Explanation:**

- Statement 1: Correct. The Arctic tundra has a short growing season.
- Statement 2: Correct. Supports species like polar bears, Arctic foxes, and caribou.
- Statement 3: Correct. Thawing permafrost releases carbon emissions.
- Statement 4: Incorrect. Tundra vegetation is highly vulnerable to climate change.

**Significance of Arctic Tundra:**

- Stores carbon in permafrost.
- Climate regulation through reflection of solar radiation.

**31) Answer: b) Only two**

**Explanation:**

- Statement 1: Incorrect. IPF has no exact known cause (idiopathic).
- Statement 2: Correct. IPF leads to complications such as pulmonary hypertension and respiratory failure.
- Statement 3: Correct. Genetic predisposition can increase the risk of developing IPF.

**32) Answer: a) Warming of sea surface temperatures in the eastern Pacific Ocean**

**Explanation:**

- El Niño is characterized by warming of the sea surface in the eastern Pacific due to weakened trade winds, disrupting global weather patterns.

**33) Answer: c) To provide financial support through loans against electronic warehouse receipts**

**Explanation:**

- The Credit Guarantee Scheme for e-NWR supports loans for farmers using electronic negotiable warehouse receipts, reducing credit risks.

**34) Answer: d) Reaction of formaldehyde with sulphite ions in aerosols**

**Explanation:**

- HMS forms in aerosols when formaldehyde reacts with sulphite ions in the presence of liquid water, requiring specific atmospheric conditions.

**35) Answer: a) Above-normal monsoons and colder winters**

**Explanation:**

- La Niña enhances monsoons in India, leading to above-normal rainfall and colder winters due to stronger trade winds and cooler temperatures.

**36) Answer: d) None**

**Explanation:**

- Triple Dip La Niña leads to above-normal monsoons in India, cooler winters, and increased cyclone activity in the Atlantic and Australian region.

**37) Answer: b) In the Mozambique Channel between Madagascar and Mozambique**

**Explanation:**

- Mayotte, a French overseas territory, is located in the Mozambique Channel between Madagascar and Mozambique.

**38) Answer: c) All three**

**Explanation:**

- The CHARAK Initiative is a CSR effort covering infectious and non-communicable diseases and provides free treatment for accidental trauma and burn injuries.

**39) Answer: b) Only two**

**Explanation:**

- Statement 1: Incorrect. Antifibrotic medications slow progression but do not reverse lung damage.
- Statement 2: Correct. Oxygen therapy manages symptoms but does not halt progression.
- Statement 3: Correct. Lung transplantation is an option for advanced IPF.

**40) Answer: a) Only one**

**Explanation:**

- Statement 1: Incorrect. Moldova is mostly low-lying with rolling hills, not mountains.

- Statement 2: Incorrect. Transnistria is not internationally recognized as autonomous.
  - Statement 3: Correct. Moldova has fertile land and a temperate climate, supporting agriculture.
- 41) Answer: b) Only two**  
**Explanation:**
- Statement 1: Incorrect. Santa Ana winds are caused by high-pressure systems over the Great Basin, not the Pacific Ocean.
  - Statement 2: Correct. Winds are strongest when funneled through mountain passes.
  - Statement 3: Correct. These winds contribute to the rapid spread of wildfires due to their dry and gusty nature.
- 42) Answer: d) 2 and 4 only**  
**Explanation:**
- Statement 1: Incorrect. The POSH Act applies to all women, including permanent, temporary, contractual employees, interns, and volunteers.
  - Statement 2: Correct. Sexual harassment at the workplace is strictly prohibited under Section 3(1) of the Act.
  - Statement 3: Incorrect. Complaints must be filed within three months, not six months.
  - Statement 4: Correct. An LCC must be formed in districts without an ICC.
- 43) Answer: b) 2 only**  
**Explanation:**
- Statement 1: Incorrect. Solid phase alloying does not require melting; it operates entirely in the solid state.
  - Statement 2: Correct. The process reduces aluminium scrap waste through sustainable recycling.
  - Statement 3: Incorrect. The alloys produced often have superior properties compared to those made from primary metals.
- 44) Answer: d) Excessive bleeding after minor injuries**  
**Explanation:**
- Haemophilia A is a hereditary disorder caused by a deficiency in clotting Factor VIII. Symptoms include excessive bleeding after injuries, prolonged bleeding, and spontaneous bleeding in joints.
- 45) Answer: d) It enhances cross-pollination, improving crop yields**  
**Explanation:**
- Apiculture enhances crop yields by improving cross-pollination, which is crucial for crops like mustard, mango, and lychee. Beekeeping also supports biodiversity and economic benefits for farmers.
- 46) Answer: d) 1, 2, and 4 only**  
**Explanation:**
- Statement 1: Correct. MFN ensures non-discrimination and equal treatment among WTO members.
  - Statement 2: Correct. MFN originated as part of post-war multilateral trade agreements under the Bretton Woods system.
  - Statement 3: Incorrect. MFN does not eliminate tariffs but mandates equal tariff treatment for all WTO members.
  - Statement 4: Correct. MFN principles extend to trade in services and intellectual property under WTO agreements.
- 47) Answer: b) Only two**  
**Explanation:**
- Statement 1: Incorrect. ASHAs are selected from the local community, not appointed directly by the Ministry of Health and Family Welfare.
  - Statement 2: Correct. ASHAs play a significant role in promoting institutional deliveries and antenatal care.
  - Statement 3: Correct. They receive performance-based incentives for services like immunization and disease control under the NHM.
- 48) Answer: d) MFN status is granted to all WTO members automatically.**  
**Explanation:**
- MFN status under the WTO ensures non-discriminatory trade practices but does not eliminate trade barriers entirely.
  - There is no formal WTO procedure for revoking MFN status.
  - MFN applies to goods, services, and intellectual property.
- 49) Answer: c) Intense volcanic activity driven by tidal heating.**  
**Explanation:**
- Io is the most volcanically active body in the solar system, with over 400 active volcanoes.
  - This activity is driven by tidal heating due to gravitational interactions with Jupiter and other Galilean moons.
- 50) Answer: a) Only one**  
**Explanation:**
- Statement 1: Incorrect. Cyber slavery involves human trafficking and coercion into cybercrimes, not unethical AI use in the gig economy.
  - Statement 2: Correct. Victims are coerced into online scams and fraudulent activities.
  - Statement 3: Incorrect. Cyber slavery often targets vulnerable populations, not individuals with advanced technical skills.