

# Solutions

DATE : 12<sup>th</sup> May – 18<sup>th</sup> May

1) Correct Answer: A

Explanation:

- Mount Kailash is a **sacred peak** located in the **Tibet Autonomous Region (TAR) of China**.
- It is revered in **four religions**:
  - ❖ Hinduism – as the abode of Lord Shiva.
  - ❖ Buddhism – associated with Demchok (Chakrasamvara).
  - ❖ Jainism – believed to be the site of Rishabhadeva's liberation.
  - ❖ Bon religion – regarded as the seat of spiritual power.
- It is the **source of four major rivers** of Asia:
  - ❖ Brahmaputra, Sutlej, Indus, and Karnali.
- The **Kailash Mansarovar Yatra (KMY)** is conducted by India's **Ministry of External Affairs**.
  - ❖ It was halted in 2020 due to **COVID-19** and **LAC tensions**.
  - ❖ Resumed in **2024–25**, after a **5-year pause**.
- Mount Kailash remains **unclimbed** due to **spiritual restrictions**.

Hence, Option A is correct.

2) Correct Answer: C

Explanation:

- Bhimgad Wildlife Sanctuary (BWS)** is located in the **Belgaum district of Karnataka, close to Goa**.
- It was notified in **December 2011** and forms part of the **Western Ghats**, a **UNESCO World Heritage site**.
- It derives its name from **Bhimgad Fort**, built by **Chhatrapati Shivaji** in the 17th century.
- Notable for:
  - ❖ **Rare avifauna** like **Malabar Grey Hornbill, Imperial Pigeon, and Velvet-fronted Nuthatch**.
  - ❖ **Malabar Trogan** – an endemic species.
  - ❖ **Wroughton's Free-tailed Bat** – only breeding site in **Barapede Caves**.
- Encompasses **Vajrapoha Waterfalls** and supports the **Mahadayi River catchment**.

Hence, Option C is correct.

3) Correct Answer: B

Explanation:

- The **Saola**, also called the "**Asian Unicorn**", is one of the **rarest large mammals** in the world.
- Belongs to the **Bovid family**, discovered in **1992** in **Vietnam**.
- Genome mapping** revealed two population splits **5,000–20,000 years ago**, due to:
  - ❖ **Last Glacial Maximum**
  - ❖ **Agricultural expansion in Vietnam**
- Key Characteristics:
  - ❖ **Dark body, white facial markings, and long parallel horns in both sexes**.
  - ❖ "Saola" means **spinning wheel post** in Lao – referring to **horn shape**.
- Habitat: Annamite mountain range**, but **not found in highland forests** (Statement 2 is incorrect).

- IUCN Status: Critically Endangered**
  - ❖ Main threats: **Habitat loss, indiscriminate snaring, poaching**.

Statement 2 is incorrect, Statements 1 & 3 are correct.  
Hence, Option B is correct.

4) Correct Answer: B

Explanation:

- Semaglutide** is a **GLP-1 receptor agonist**, used in **Type 2 diabetes** and **obesity** treatment.
- Does not replace insulin, but:
  - ❖ **Stimulates insulin release**
  - ❖ **Suppresses glucagon secretion**
  - ❖ **Delays gastric emptying**
  - ❖ **Reduces appetite**
- Not used for **Type 1 diabetes**; it is **not a synthetic insulin analog** → Statement 1 is incorrect.
- Recent trials show benefits in **Metabolic Dysfunction-Associated Steatohepatitis (MASH)**:
  - ❖ A progressive form of **non-alcoholic fatty liver disease (NAFLD)**.
  - ❖ Semaglutide **reduces liver inflammation and fat accumulation** → Statement 2 is correct.
- Available under brand names:
  - ❖ **Ozempic** and **Rybelsus** (diabetes)
  - ❖ **Wegovy** (obesity management) → Statement 3 is correct

Hence, Option B is correct.

5) Correct Answer: C

Explanation:

- Microfinance Institutions (MFIs)** cater to the **unbanked population**, particularly in **rural and semi-urban areas**.
  - ❖ Provide **microloans** to those without access to **formal banking**.
  - ❖ Usually **collateral-free loans**.
- Statement 1 is correct** – They empower financially excluded populations.
- Statement 2 is incorrect**:
  - ❖ NBFC-MFIs are **regulated by the Reserve Bank of India (RBI)**
  - ❖ Under **RBI Master Directions** (earlier 2011, revised in 2022), not just under **NBFC-MFI Framework of 2014**.
- Statement 3 is correct**:
  - ❖ MFIs also offer **micro-savings, micro-insurance, remittances**, and **financial literacy programs**.

Hence, Option C is correct.

6) Correct Answer: D

Explanation:

- Maharana Pratap** was born on **9th May 1540** in **Kumbhalgarh**, Rajasthan.
- He was the **13th ruler of Mewar** and the **eldest son of Udai Singh II**.

- **Statement 1 is correct:**  
❑ **Maharana Udai Singh II** was ruler of **Mewar** and the founder of **Udaipur**.
- **Statement 2 is correct:**  
❑ The **Battle of Haldighati (1576)** was fought between **Maharana Pratap** and **Raja Man Singh of Amber**, a general of **Mughal emperor Akbar**.  
❑ Though brave, **Maharana Pratap lost the battle**.
- **Statement 3 is correct:**  
❑ After 1579, he **recaptured Western Mewar** and made **Chavand near Dungarpur** his new capital.  
❑ He died in **1597**, succeeded by **Amar Singh**, who later **submitted to Jahangir in 1614**.

❑ All statements are correct  
❑ Hence, Option D is correct.

7) Correct Answer: A

❑ Explanation:

- **Tapti (Tapi) River** is the **second-largest west-flowing river in India**, after the **Narmada**.
- **Statement 1 is correct:**  
❑ It flows through **Madhya Pradesh, Maharashtra, and Gujarat** and **drains into the Arabian Sea** at the **Gulf of Khambhat**.
- **Geographical Significance:**  
❑ Originates in **Multai (Betul district, MP)**.  
❑ Flows between **Satpura Range (north)** and **Mahadeo Hills (east)**.  
❑ Runs **parallel to Narmada** (to its north).
- **Tributaries:**  
❑ **Main left-bank:** **Purna River** (perennial).  
❑ Others include **Buray, Girna, Panjarha**, etc.

❑ Hence, Option A is correct.

8) Correct Answer: B

❑ Explanation:

- **SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas)** is a **Central Sector Scheme**.
- **Statement 1 is correct:**  
❑ Uses **drones and GIS technology** to map **residential lands** in rural areas and grant **legal ownership**.
- **Statement 2 is correct:**  
❑ Focuses on "abadi areas" to create **Record of Rights (RoR)** for property owners.
- **Statement 3 is not correct:**  
❑ Launched in **April 2020** by the **Ministry of Panchayati Raj, not the Ministry of Rural Development**.
- **Gram Manchitra:**  
❑ A **GIS-based platform** that integrates village-level development data for **spatial planning and governance**.

❑ Statement 3 is incorrect  
❑ Hence, Option B is correct.

9) Correct Answer: D

❑ Explanation:

- **Statement 1 is not correct:**  
❑ **First sermon** by Gautam Buddha was delivered at **Sarnath**, known as **Dharmachakra Pravartana**.  
❑ But this statement wrongly equates it with **Mahaparinirvana**, which actually means **Buddha's death at Kushinagar**.
- **Statement 2 is not correct:**  
❑ The **Tripiṭaka** (Vinaya, Sutta, Abhidhamma Pitakas) was **first**

**written** during the **4th Buddhist Council**, held in **Sri Lanka**, not during the 3rd.

- **Statement 3 is correct:**  
❑ **Mahayana Buddhism** introduced:
  - **Bodhisattva ideal**
  - **Image worship of Buddha**
  - Emphasis on **universal salvation** over individual nirvana

❑ Only Statement 3 is correct  
❑ Hence, Option D is correct.

10) Correct Answer: C

❑ Explanation:

- **Statement 1 is correct:**  
❑ As per **Article 112**, the **Annual Financial Statement (Union Budget)** must distinguish between **Revenue** and **Capital** expenditure.
- **Statement 2 is not correct:**  
❑ **Salaries and pensions** are **Revenue Expenditure**, not capital.  
❑ Capital expenditure leads to **asset creation**, e.g., infrastructure.
- **Statement 3 is correct:**  
❑ **Grants-in-aid** to states, even if used for creating assets, are still categorized under **Revenue Expenditure**.

❑ Statement 2 is incorrect  
❑ Hence, Option C is correct.

11) Correct Answer: B

❑ Explanation:

- **Statement 1 is correct:**  
❑ **Kendu (Tendu) leaf** is a **nationalised product**, just like **bamboo** and **sal seed**.  
❑ This means the **government controls its collection, processing, and trade** to protect tribal rights and prevent exploitation.
- **Statement 2 is correct:**  
❑ As per the **Forest Rights Act (FRA), 2006**, **Kendu leaves** are **classified under Minor Forest Produce (MFP)**.  
❑ MFP includes **non-timber products** critical for tribal livelihoods.
- **Statement 3 is not correct:**  
❑ While **Odisha** is a major producer, it ranks **third**, after **Madhya Pradesh and Chhattisgarh**.  
❑ Odisha contributes **~20% of national output**, about **4.5-5 lakh quintals annually**.

❑ Hence, Option B is correct.

12) Correct Answer: A

❑ Explanation:

- **Statement 1 is correct:**  
❑ **Wadge Bank** is a **submarine plateau** located about **80 km off Kanyakumari**, within India's **Exclusive Economic Zone (EEZ)**.
- **Statement 2 is correct:**  
❑ It is **one of the richest fishing grounds globally**, due to **high biological productivity**.  
❑ Functions as a **breeding and feeding ground** for various fish species.
- **Statement 3 is not correct:**  
❑ As per the **1976 India-Sri Lanka Maritime Boundary Agreement**, India holds **sovereign rights** over Wadge Bank.  
❑ Sri Lankan fishermen are restricted from fishing in this area, but the agreement does not include **exploration rights over petroleum/minerals**.

¶ Hence, Option A is correct.

13) Correct Answer: B

¶ Explanation:

- Statement 1 is not correct:  
¶ Germanium is not a rare earth element; it is a metalloid or semi-metal.  
¶ It is classified as a critical mineral due to strategic industrial use, but it is not found abundantly in India, including the Northeast.
- Statement 2 is correct:  
¶ Used in fiber optics, infrared devices, and solar cells due to its optical clarity, heat resistance, and efficiency.  
¶ Essential for digital infrastructure, especially internet and telecom systems.
- Additional Context:  
¶ China dominates the global production of Germanium, contributing over 60% of the supply.

¶ Hence, Option B is correct.

14) Correct Answer: A

¶ Explanation:

- Statement 1 is correct:  
¶ Semi-cryogenic engines use Liquid Oxygen (LOX) as oxidizer and refined kerosene (RP-1) as fuel.  
¶ These engines are employed in modern launch vehicles for heavy-lift capability.
- Statement 2 is correct:  
¶ Compared to cryogenic (LOX + liquid hydrogen) engines, semi-cryogenic engines provide:
  - Higher density impulse
  - Simpler handling
  - Lower cost due to kerosene's stability and affordability
- Statement 3 is not correct:  
¶ Only oxidizer (LOX) is stored at cryogenic temperatures.  
¶ The fuel (kerosene) is stored at ambient temperatures, simplifying operations.  
¶ If both were cryogenic, it would be a fully cryogenic engine.

¶ Hence, Option A is correct.

15) Correct Answer: C

¶ Explanation:

- Statement 1 is correct:  
¶ Asteroids are remnants from the early solar system (~4.6 billion years ago).  
¶ Mostly found in the Asteroid Belt between Mars and Jupiter.
- Statement 2 is not correct:  
¶ Trojan asteroids share planetary orbits at Lagrangian points (L4 and L5).  
¶ While many Trojans are linked to Jupiter, others exist with Mars, Neptune, and even Earth.
- Statement 3 is correct:  
¶ The Hera Mission (ESA) and NETRA (ISRO) are designed for:
  - Monitoring Near-Earth Objects (NEOs)
  - Enhancing planetary defense
  - Tracking space debris and potential impact threats.

¶ Hence, Option C is correct.

16) Correct Answer: C

¶ Explanation:

- Pair 1: NASA – NISAR  
¶ NISAR (NASA-ISRO Synthetic Aperture Radar) is a joint project between NASA and ISRO.  
¶ It will provide global mapping every 12 days to track:
  - Ecosystems
  - Vegetation changes
  - Ice mass loss
  - Sea-level rise
  - Groundwater changes
  - Natural hazards like earthquakes, tsunamis, and landslides
- Pair 2: JAXA – LUPEX  
¶ LUPEX is a collaborative mission between ISRO and JAXA to explore the Moon's polar regions, particularly:
  - Permanently shadowed craters
  - Water ice detection
  - Feasibility for long-term lunar habitation
- Pair 3: CNES – Megha-Tropiques  
¶ Megha-Tropiques is an Indo-French satellite, launched in 2011.  
¶ It studies the tropical atmosphere, especially:
  - Monsoons, humidity, and cyclonic systems

¶ All three pairs are correctly matched

¶ Hence, Option C is correct.

17) Correct Answer: A

¶ Explanation:

- Statement 1 is correct:  
¶ SIDBI is a statutory body established under the SIDBI Act, 1989.  
¶ It aims at promoting and financing Micro, Small and Medium Enterprises (MSMEs).
- Statement 2 is not correct:  
¶ SIDBI is not the principal financial institution for MSMEs; it acts as a refinancing and promotional body, not as the sole or primary financing institution.
- Statement 3 is not correct:  
¶ SIDBI is not a wholly-owned government body.  
¶ Its ownership is held by public sector banks, financial institutions, insurance companies, and the Government of India jointly.

¶ Only Statement 1 is correct

¶ Hence, Option A is correct.

18) Correct Answer: A

¶ Explanation:

- Statement 1 is correct:  
¶ Bond forwards are customized forward contracts for buying/selling government securities at a future date and pre-agreed price.  
¶ RBI introduced norms to ensure transparency and hedging instruments for institutional investors.
- Statement 2 is correct:  
¶ These help hedge interest rate risks, especially for long-term investors like insurance companies.  
¶ Unlike Forward Rate Agreements (FRAs) which are cash-settled, bond forwards involve physical delivery of securities.
- Statement 3 is not correct:  
¶ SFBs, payment banks, LABs, and RRBs are not permitted to participate.  
¶ Eligible participants include:
  - Scheduled Commercial Banks (SCBs)
  - Primary Dealers
  - Institutional investors such as insurance firms
  - Non-retail investors and foreign investors under FEMA 2019

- Only Statements 1 and 2 are correct
- Hence, Option A is correct.

**19) Correct Answer: C****Explanation:**

- Background:**
  - The **Jeti Srinivas Committee (2018)** was constituted by the **Ministry of Corporate Affairs** to strengthen the **Corporate Social Responsibility (CSR)** ecosystem.
- Key Recommendations:**
  - Make **CSR expenditure tax-deductible**
  - Allow **carry-forward of unspent CSR funds for 3 to 5 years**
  - Align **Schedule VII** of the Companies Act with **Sustainable Development Goals (SDGs)**
  - Develop a **CSR Exchange Portal** to link **companies, implementing agencies, and beneficiaries**
  - Allow **CSR funds for social impact bonds** and **social impact companies**

These reforms aim to **promote transparency, accountability, and strategic CSR investments.**

Hence, Option C is correct.

**20) Correct Answer: B****Explanation:**

- Dongria Kondh** is a **Particularly Vulnerable Tribal Group (PVTG)** residing in the **Niyamgiri Hills, Odisha**.
- Key Features:**
  - Known for **strong spiritual connection with nature**
  - Worship **Niyam Raja**, the deity of the hills
  - Follow **Podu (shifting) cultivation**
  - Speak **Kui** (an unwritten Dravidian language)
- Sub-tribes** include:
  - Kovi, Kuttia, Languli, Penga, and Jharnia** (stream protectors)
- Legal Significance:**
  - Played a **key role in environmental justice** by resisting **Vedanta's mining project**
  - In **2013, Supreme Court upheld Gram Sabha's constitutional right** to decide on mining → a **historic precedent** for tribal rights under the **Forest Rights Act, 2006**

Hence, Option B is correct.

**21) Correct Answer: C****Explanation:**

- Statement 1 is correct:**
  - The **CMS Rome Strategic Plan** focuses on curbing **Illegal Killing, Trapping, and Trade of Birds (IKB)** in **Europe and the Mediterranean**.
  - It aims to reduce such activities by **50% by 2030** compared to 2020 levels.
- Statement 2 is correct:**
  - India has implemented the **National Action Plan for the Conservation of Migratory Birds (2018–2023)**.
  - It aims to protect birds along the **Central Asian Flyway (CAF)** — a major migratory corridor extending from the **Arctic to the Indian Ocean**, passing through **30 countries**.

- Both statements are correct
- Hence, Option C is correct.

**22) Correct Answer: D****Explanation:**

- Statement 1 is correct:**
  - Anamalai Tiger Reserve** is located in the **Anamalai Hills**, part of the **Western Ghats** in **Tamil Nadu**.
  - It was **declared a Tiger Reserve in 2007**.
- Statement 2 is correct:**
  - Specific zones like **Kariyan Shola, Grass Hills, and Manjampatti** within ATR have been recognized as part of **UNESCO's tentative list for World Heritage Sites** due to their **ecological significance**.
- Statement 3 is correct:**
  - ATR is home to many **indigenous tribal groups**, including the **Kadars, Muduvars, Malasars, Malai Malasars, Eravalars, and Pulayars**.
- Location:**
  - Bordered by **Parambikulam TR** (east), **Chinnar Wildlife Sanctuary**, and **Eravikulam National Park** (southwest).

- All statements are correct
- Hence, Option D is correct.

**23) Correct Answer: B****Explanation:**

- Statement 1 is not correct:**
  - Jute**, known as the "**golden fibre**", is **not the second most important cash crop after cotton**.
  - Other crops like **sugarcane** and **oilseeds** are more significant in terms of **cultivation and contribution to economy**.
- Statement 2 is correct:**
  - India is the largest producer of jute globally**, with **West Bengal** leading, followed by **Assam** and **Bihar**.
- Statement 3 is correct:**
  - The **Jute Corporation of India (JCI)** is a **price support agency** under the **Ministry of Textiles**.
  - It procures raw jute at **Minimum Support Price (MSP)** without any **quantity restriction**, safeguarding farmer interests.

- Only Statements 2 and 3 are correct
- Hence, Option B is correct.

**24) Correct Answer: C****Explanation:**

- Statement 1 is correct:**
  - LUPEX (Lunar Polar Exploration Mission)** is a joint venture between **ISRO** and **JAXA**.
  - In India, LUPEX is informally referred to as **Chandrayaan-5**.
- Statement 2 is correct:**
  - The mission will be launched using **JAXA's H3-24L rocket**, carrying:
    - A **lander from ISRO**
    - A **rover developed by MHI (Japan)**
      - Its goal is to **explore the lunar South Pole**, particularly **Permanently Shadowed Regions (PSRs)**, to **search for water ice and volatiles**.

- Both statements are correct
- Hence, Option C is correct.

25) **Correct Answer: A**

❑ **Explanation:**

- **Statement 1 is not correct:**  
❑ TB is caused by a bacterium – *Mycobacterium tuberculosis*, not a virus.  
❑ It spreads through air, not via contaminated water.
- **Statement 2 is correct:**  
❑ The BCG (Bacillus Calmette–Guérin) vaccine is a live attenuated vaccine.  
❑ It is most effective in children, especially against TB meningitis and miliary TB.
- **Statement 3 is not correct:**  
❑ People with HIV are at higher risk of TB due to weakened immunity, not lower.  
❑ TB is a leading cause of death among people living with HIV/AIDS.

❑ Only Statement 2 is correct

❑ Hence, Option A is correct.

26) **Correct Answer: D**

❑ **Explanation:**

- **Quantum Dots** are semiconducting nanoparticles measuring only a few nanometres in size.
- They exhibit **quantum confinement**, a phenomenon where:  
❑ Electron motion is restricted in all three spatial dimensions,  
❑ Leading to discrete energy levels and size-dependent optical and electronic properties.
- Their **unique characteristics** make them highly useful in:
  - Light Emitting Diodes (LEDs)
  - Medical diagnostics (bio-imaging and detection)
  - Solar panels (improving energy efficiency)
  - Quantum computing and semiconductor manufacturing
- The 2023 Nobel Prize in Chemistry was awarded for advances in quantum dot technology.

❑ Hence, Option D is correct.

27) **Correct Answer: A**

❑ **Explanation:**

- **Statement 1 is not correct:**  
❑ PLFS was launched in 2017 and is conducted by the National Statistical Office (NSO).  
❑ NSO is under the Ministry of Statistics and Programme Implementation (MoSPI), not MOSPI itself (a minor conceptual slip in the statement structure).
- **Statement 2 is not correct:**  
❑ Labour Force Participation Rate (LFPR) includes those who are either working or actively seeking work, not just those working.  
❑ The explanation misattributes definitions slightly.
- **Statement 3 is correct:**  
❑ In urban areas, PLFS gives quarterly estimates using Current Weekly Status (CWS) – i.e., activity status during the last 7 days.  
❑ In rural and urban areas, it also gives annual data based on Usual Status (principal + subsidiary activities in the past 365 days).

❑ Only Statement 3 is correct

❑ Hence, Option A is correct.

28) **Correct Answer: B**

❑ **Explanation:**

- **Statement 1 is not correct:**  
❑ Traditional passports remain valid, and conversion to e-passports is optional.  
❑ However, PSP 2.0 refers to the broader **Passport Seva Programme**, not specifically about the e-passport conversion process.
- **Statement 2 is correct:**  
❑ An ePassport contains a **Radio Frequency Identification (RFID)** chip and antenna, which store:
  - Personal details
  - Biometric information of the passport holder
- **Statement 3 is correct:**  
❑ Public Key Infrastructure (PKI) provides the **security foundation** for e-passports by ensuring:
  - Authentication of data
  - Prevention of tampering or duplication

❑ Statements 2 and 3 are correct

❑ Hence, Option B is correct.

29) **Correct Answer: B**

❑ **Explanation:**

- **Statement 1 is not correct:**  
❑ While Jet Streams operate in the **upper troposphere (20,000–50,000 ft)**,  
❑ Their influence on Noctilucent clouds is not established or significant.  
❑ Noctilucent clouds form in the **mesosphere**, not troposphere/stratosphere.
- **Statement 2 is correct:**  
❑ Jet streams influence the Indian Monsoon by affecting the **onset and withdrawal** of winds.  
❑ Their shift is crucial for monsoon dynamics.
- **Statement 3 is correct:**  
❑ Jet streams cause alternate high- and low-pressure zones through **crest (ridge)** and **trough (valley)** patterns, impacting cyclones and anticyclones.

❑ Statements 2 and 3 are correct

❑ Hence, Option B is correct.

30) **Correct Answer: D**

❑ **Explanation:**

- **Statement 1 is not correct:**  
❑ The scheme is implemented by the **Ministry of Labour and Employment**,  
❑ With execution via LIC (Pension Fund Manager) and **Common Service Centres (CSCs)**.
- **Statement 2 is not correct:**  
❑ It is targeted at **unorganised workers** with **monthly income below ₹15,000**,  
❑ Not meant for organised sector employees.
- **Statement 3 is not correct:**  
❑ Although applicants must be **18–40 years old** and have **Aadhaar, bank account, and mobile**,  
❑ They should **not be income tax payers**, or **covered under NPS, EPFO, ESIC**.
- **Key Feature:**  
❑ Upon turning **60**, subscribers receive a **minimum pension of ₹3,000/month**.

- ❑ All three statements are incorrect
- ❑ Hence, Option D is correct.

31) Correct Answer: (b) Only two

❑ Explanation:

- Statement 1 is correct:  
❑ The GEF funds projects on **biodiversity, climate change, land degradation**, etc.  
❑ Major funds include **GEF Trust Fund, Least Developed Countries Fund (LDCF), and Special Climate Change Fund (SCCF)**.
- Statement 2 is correct:  
❑ The **CoHABITAT Project**, supported by GEF and implemented by UNDP and MoEFCC, works on conserving **wetlands, forests, and grasslands** in the **Central Asian Flyway (CAF)**.
- Statement 3 is incorrect:  
❑ The **Sustainable Cities Integrated Program (SCIP)** covers **20 countries, not just Africa**. It promotes **urban transformation globally**.

❑ Hence, Option (b) is correct.

32) Correct Answer: (d) Nitrogen

❑ Explanation:

- Nitrogen is the **most deficient** nutrient in Indian soils:  
❑ <5% of soils have sufficient nitrogen.  
❑ Compared to **phosphate (40%), potash (32%), and organic carbon (20%)**.
- Reason:  
❑ Excessive urea use and lack of crop rotation reduce nitrogen levels.

❑ Hence, Option (d) is correct.

33) Correct Answer: (d) None

❑ Explanation:

- All 3 statements are correct:
  - Statement 1: Requires **2/3rd of members present and voting**.
  - Statement 2: Also needs a **majority of the total membership**.
  - Statement 3: **Both Houses must pass independently** before the President acts.
- Governed under the **Judges Inquiry Act, 1968**.

❑ No statement is incorrect. Hence, Option (d) is correct.

34) Correct Answer: (b) They form reflective surfaces that act as natural mirrors

❑ Explanation:

- After rain, **thin water layers** form over the **flat salt crust**, creating a **mirror effect**.
- Seen at **Salar de Uyuni (Bolivia)**.
- **Not fertile**, do not form **domes**, and don't **expand** significantly.

❑ Hence, Option (b) is correct.

35) Correct Answer: (a) 1 only

❑ Explanation:

- Statement 1 is correct:  
❑ **Landslides and deforestation** are major contributors to **soil erosion** in hilly areas.
- Statement 2 is incorrect:  
❑ **Salinity ingress** is a **coastal issue, not relevant** to hilly areas like Uttarakhand.
- Statement 3 is incorrect:  
❑ **Overgrazing** is more common in **semi-arid** areas, not a major cause in **Uttarakhand**.

❑ Hence, only Statement 1 is correct → Option (a).

36) Correct Answer: (d) None

❑ Explanation:

- Statement 1 is correct:  
❑ No formal WTO procedure to revoke **MFN status**, but nations can **unilaterally withdraw** it.
- Statement 2 is correct:  
❑ Revocation allows **discriminatory tariffs**, breaching **non-discrimination** under WTO.
- Statement 3 is correct:  
❑ **Exceptions allowed** for developing countries (e.g., **GSP scheme**).

❑ All statements are correct → Option (d).

37) Correct Answer: (b) A therapy that replaces deficient clotting factors via injections into veins

❑ Explanation:

- Used in **hemophilia** treatment.
- Involves **injection of clotting factors** (e.g., Factor VIII) into the bloodstream.
- Helps in controlling **bleeding episodes**.
- New tech: **Roctavian gene therapy**, uses **AAV vector** for Factor VIII gene delivery.

❑ Hence, Option (b) is correct.

38) Correct Answer: (c) 1, 2 and 4 only

❑ Explanation:

- Statement 1: Correct – Warmer seas cause **coral bleaching**.
- Statement 2: Correct – Disrupted upwelling → less nutrients, affecting **marine food chains**.
- Statement 3: Incorrect – El Niño **weakens cold currents**.
- Statement 4: Correct – Fish stocks drop due to warmer waters and nutrient decline.

❑ Option (c) is correct.

39) Correct Answer: (b) Koldihwa

❑ Explanation:

- **Koldihwa (U.P.):**
  - Evidence of **early rice cultivation**
  - **Polished stone tools** found
  - Key Neolithic site in **Ganga Valley**
- Others:
  - **Bhimbetka** – Paleolithic cave art
  - **Hunsgi** – Early stone tools, no major agri
  - **Brahmagiri** – Megalithic site

❑ Hence, Option (b) is correct.

40) **Correct Answer: (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I**

Explanation:

- **Statement-I:** Arctic warming increases **global greenhouse effect**.
- **Statement-II:** **Permafrost thawing** releases **CO<sub>2</sub> and CH<sub>4</sub>**, which are **GHGs**, worsening warming.
- The **feedback loop** explains how Arctic warming **accelerates global climate change**.

Hence, Option (a) is correct.

41) **Correct Answer: (b) To create a shared framework for civilian-led disaster response coordination and efficient humanitarian aid deployment**

Explanation:

- **IPLN** is a **Quad-led initiative** involving **India, USA, Japan, and Australia**.
- **Primary Objective:**
  - ❑ Develop **shared logistics infrastructure**
  - ❑ Facilitate **interoperability for disaster relief and humanitarian assistance**
- Focus is **civilian**, not military.
- NOT about:
  - ❑ Military alliance (**Option a**)
  - ❑ Free trade (**Option c**)
  - ❑ Surveillance against illegal fishing (**Option d**)

Hence, Option (b) is correct.

42) **Correct Answer: (d) 1 only**

Explanation:

- **Statement 1 is correct:**
  - ❑ Policy **simplifies coal linkage** to **two windows**:
    - **Window-I:** Coal at **notified price**
    - **Window-II:** Coal at **premium basis**
  - ❑ Replaces earlier **8 categories** to improve **transparency**.
- **Statement 2 is incorrect:**
  - ❑ The policy **encourages import substitution**, allowing **ICB plants** to access domestic coal.
- **Statement 3 is incorrect:**
  - ❑ Empowered Committee is headed by **Secretaries**, not **Union Ministers**.

Hence, Option (d) is correct.

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

Explanation:

- **Statement I is correct:**
  - ❑ CBI derives powers from the **Delhi Special Police Establishment (DSPE) Act, 1946**.
- **Statement II is correct:**
  - ❑ **Santhanam Committee (1962-64)** recommended setting up a **central agency** to curb corruption → led to creation of **CBI in 1963**.
- **However, Statement II does not explain Statement I.**
  - ❑ DSPE Act **predates** the Committee.

Hence, Option (b) is correct.

44) **Correct Answer: (c) All three**

Explanation:

National Waterway	River System	State	Match Correct?
NW-1	Ganga-Bhagirathi-Hooghly (B)	Uttar Pradesh (Y)	✓Yes
NW-2	Brahmaputra River (A)	Assam (X)	✓Yes
NW-3	West Coast Canal (C)	Kerala (Z)	✓Yes

All matches correct → Option (c).

45) **Correct Answer: (b) Only two**

Explanation:

- **Statement 1 is correct:**
  - ❑ HDI range: 0 to 1 → Higher = Better development
- **Statement 2 is incorrect:**
  - ❑ Education is measured by:
    - **Mean Years of Schooling**
    - **Expected Years of Schooling**
    - ❑ **Adult Literacy & Gross Enrolment** are no longer used.
- **Statement 3 is correct:**
  - ❑ IHDI ≤ HDI → Represents loss due to inequality

Only Statements 1 and 3 are correct → Option (b).

46) **Correct Answer: (a) A-2, B-1, C-4, D-5**

Explanation:

Civil Defence Activity	Function
<b>Warden Service</b>	Disseminate warnings & local coordination (2)
<b>Casualty Service</b>	Provide first aid & medical evacuation (1)
<b>Rescue Service</b>	Extricate trapped persons from debris (4)
<b>Depot/Transport</b>	Manage resources & logistics during emergencies (5)

Hence, Option (a) is correct.

47) **Correct Answer: (d) The Sunda Strait, between the islands of Java and Sumatra in Indonesia**

Explanation:

- **Anak Krakatau:** Volcanic island formed after **1883 Krakatoa eruption**
- Located in **Sunda Strait, Indonesia**
- Part of **Pacific Ring of Fire** – tectonically active zone.

Hence, Option (d) is correct.

48) **Correct Answer: (c) Karregutta hills on the Chhattisgarh-Telangana border**

Explanation:

- **Mission Sankalp** targets:
  - ❑ **Karregutta hills**, spanning **Bijapur (Chhattisgarh)** and **Mulugu/Kothagudem (Telangana)**
  - ❑ Region is stronghold of **PLGA, DKSZC, and Telangana Maoists**
  - Others like **Abujhmad, Saranda, Malkangiri** are Naxal-affected, but **not core** to this mission.

Hence, Option (c) is correct.

49) Correct Answer: (c) Revealed complementary genetic diversity between its historically split populations

Explanation:

- **Saola**, also called **Asian Unicorn**, is **Critically Endangered**.
- Genome analysis revealed:
  - Two distinct **genetic populations**
  - Each lost different **genetic traits** → together they can offer a "genetic rescue" through **captive breeding**
- **Cloning/immunity/location tracking** not related to this sequencing study.

Hence, Option (c) is correct.

50) Correct Answer: (a) A-2, B-3, C-4, D-1

Explanation:

System	Origin & Range
S-400 Triumph	Russian, <b>Long-Range (400 km)</b> → (2)
Barak-8 MRSAM	India-Israel, <b>Medium-Range (70-100 km)</b> → (3)
Akash SAM	<b>Indigenous</b> , Medium-Range (25-70 km) → (4)
S-125 Pechora	Russian, <b>Legacy Short-Range (~35 km)</b> → (1)

Hence, Option (a) is correct.



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