

# Solutions

DATE : 7<sup>th</sup> July- 13<sup>th</sup> July

1)  Correct Answer: (c)

 Topic: Enemy Property Act, 1968

 Legal Framework:

- Enacted in **1968** to manage properties of nationals from hostile nations (primarily **Pakistan and China**).
- Administered by the **Custodian of Enemy Property for India**, under the **Ministry of Home Affairs**.

 Definition and Scope:

- Defines '**enemy**' as any country or citizen of a country which committed **external aggression** against India.
- **Enemy Property** includes assets **owned, held, or managed** on behalf of such enemies, enemy firms, or enemy subjects.

 Key Amendment:

- **2017 Amendment**: Expanded to include:
  - **Legal heirs**, even if Indian citizens.
  - Those who changed nationality.

 Statement-wise Analysis:

- **Option (a): Incorrect** – Renouncing Indian citizenship is not the primary criterion.
- **Option (b): Incorrect** – Location near disputed borders is irrelevant.
- **Option (c): Correct** – Accurately defines enemy property as per the Act.
- **Option (d): Incorrect** – Espionage is not the defining factor under the Act.

2)  Correct Answer: (b) 2, 3 and 4 only

 Topic: Geography of the Red Sea

 Geophysical Features:

- A **marginal sea** of the **north-western Indian Ocean**.
- Highly **saline** due to:
  - **No river inflow**.
  - **Low precipitation**.

 Connectivity:

- **To the Mediterranean** via the **Suez Canal**.
- **To the Gulf of Aden** via **Bab El Mandeb Strait**.

 Bordering Nations:

- **Africa**: Egypt, Sudan, Eritrea.
- **Asia**: Saudi Arabia, Yemen, Jordan, Israel.

 Statement-wise Analysis:

- **Statement 1: Incorrect** – No rivers drain into the Red Sea.
- **Statement 2: Correct** – It is classified as a marginal sea.
- **Statement 3: Correct** – Connected to Gulf of Aden via Bab El Mandeb.
- **Statement 4: Correct** – Connected to the Mediterranean via the Suez Canal.

3)  Correct Answer: (d) 1 and 2 only

 Topic: Central Drugs Standard Control Organization (CDSCO)

 Institutional Details:

- **CDSCO** is the **national regulatory authority** for drugs and cosmetics.

- Operates under the **Ministry of Health & Family Welfare**, through the **Directorate General of Health Services**.

### ◆ Functions:

- **Approves** new drugs and clinical trials.
- **Regulates** import of drugs.
- **Issues advisories** on drug safety and quality.

### ◆ Division of Power: States regulate **manufacturing and sales** within their jurisdiction.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – CDSCO approves new drugs and clinical trials.
- **Statement 2: Correct** – Operates under DGHS, MoHFW.
- **Statement 3: Incorrect** – State regulators handle manufacturing and sales.

4)  Correct Answer: (b) 1 and 2 only

### 🧠 Topic: Jal Jeevan Mission (JJM)

### ◆ Background:

- **Launched in 2019**.
- **Centrally Sponsored Scheme** under the **Ministry of Jal Shakti**.

### ◆ Objectives:

- Provide **Functional Household Tap Connections (FHTCs)** to all rural households.
- Ensure **safe and adequate drinking water by 2028** (extended from 2024).

### ◆ Governance: Water is a State Subject → States implement, Centre funds and supports.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – It's a centrally sponsored scheme.
- **Statement 2: Correct** – FHTC is the primary goal.
- **Statement 3: Incorrect** – Implementation lies with states, not Centre.

5)  Correct Answer: (b) 1, 2 and 3

### 🧠 Topic: Kaladan Multi-Modal Transit Transport Project (KMTTP)

### ◆ Overview:

- India–Myanmar connectivity project under the **Act East Policy**.
- Objective: Improve access to **North-East India** via **multi-modal transport**.

### ◆ Project Components:

1. **Sittwe Port** (Myanmar) – sea link from Eastern India.
2. **Kaladan River waterway** – Sittwe to Paletwa.
3. **Road link** – Paletwa to **Zorinpui** in Mizoram.

### ◆ Administrative Setup:

- **Ministry of External Affairs** – Nodal Ministry.
- **Inland Waterways Authority of India (IWAI)** – Project Development Consultant.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – IWAI is Project Consultant.
- **Statement 2: Correct** – Project connects Eastern India to NE via Myanmar.
- **Statement 3: Correct** – MEA is the nodal ministry.

6)  Correct Answer: (c) 1, 2 and 3

### 🧠 Topic: Technological Innovations in Consumer Products

### ◆ Key Innovations:

1. **Battery Passport Framework**

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- Functions as an *identity document* for each battery.
- Contains data on **origin, chemical composition, performance, and end-of-life options**.
- Information is often embedded via **QR codes** for tracking and transparency.

### 2. Blockchain in Supply Chains

- Enhances **transparency and traceability** in sectors like **food processing**.
- Allows real-time **verification of transactions** and builds an **immutable data trail**.

### 3. Smart Foods

- Developed using **innovative techniques** to boost **shelf life, nutrition, and safety**.
- Respond to growing demand for **sustainable and functional food products**.

#### ◆ Regulatory Oversight:

- Governed by frameworks like:
  - **DPDP Act, 2023** (India) for data.
  - **EU Batteries Regulation** for battery passports.

#### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Blockchain is used in food supply chains.
- **Statement 2: Correct** – Battery passport ensures traceability via digital ID.
- **Statement 3: Correct** – Smart foods improve shelf life and health value.

7)  **Correct Answer: (d) 1, 2 and 3**

#### 🧠 Topic: Battery Passport Framework

#### ◆ Concept and Relevance:

- Like **Aadhaar for batteries**, offering traceability and accountability.
- Each battery is assigned a **unique ID** with QR code-enabled **full lifecycle info**.

#### ◆ Global Adoption:

- **EU Batteries Regulation, 2023** mandates passports for industrial batteries (>2kWh).
- Promotes **supply chain circularity** and **international compliance**.

#### ◆ Indian Context: NITI Aayog is leading inter-ministerial discussions for national-level implementation.

#### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – EU regulation requires passports.
- **Statement 2: Correct** – QR code system with full metadata.
- **Statement 3: Correct** – Supports circular and transparent battery lifecycle.

8)  **Correct Answer: (a) 1, 2 and 3**

#### 🧠 Topic: Maize Cultivation in India

#### ◆ Agronomic Features:

- **Kharif crop**, thrives during monsoon (July–October).
- Requires **well-drained soils** (sandy loam to old alluvium).
- Ideal **temperature**: 21°C to 27°C; **soil pH**: 5.5–7.5.

#### ◆ Major Producing States: Karnataka, Madhya Pradesh, Bihar, Tamil Nadu, Telangana, Maharashtra, Andhra Pradesh.

#### ◆ Economic Significance:

- Known as the **"Queen of Cereals"** due to high yield potential.
- Used for **human food, livestock fodder, and industrial purposes**.

#### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Major maize states are listed accurately.
- **Statement 2: Correct** – It is a Kharif crop.
- **Statement 3: Correct** – Rightly called the "Queen of Cereals".

9)  Correct Answer: (c) Both 1 and 2

 Topic: Jaa Mata Joint Exercise

◆ Nature of Exercise: A bilateral maritime exercise between the Coast Guards of India and Japan.

◆ Objective: Strengthen interoperability, improve joint combat readiness, and enhance maritime cooperation in the Indo-Pacific.

◆ Strategic Context:

- Focuses on maritime domain awareness, search and rescue, and disaster response.
- Conducted amid rising security concerns in the Indo-Pacific region.

 Statement-wise Analysis:

- Statement 1: Correct – It is a joint exercise between Japanese and Indian Coast Guards.
- Statement 2: Correct – The focus is on skill enhancement and interoperability.

10)  Correct Answer: (c) Both 1 and 2

 Topic: Guadalupe River & Flash Flooding

◆ Geographical Context: The Guadalupe River, located in Texas, flows into San Antonio Bay at the Gulf of Mexico.

◆ Flash Flood Alley:

- Central Texas is dubbed “Flash Flood Alley” due to:
  - Steep topography (fast runoff).
  - High rainfall events.
  - Thin soil layers, reducing water absorption.

◆ Environmental Risks:

- Vulnerable to rapid and severe flooding, affecting life and infrastructure.
- Recent floods reaffirm this classification.

 Statement-wise Analysis:

- Statement 1: Correct – River rises in Kerr County (Texas).
- Statement 2: Correct – Empties into San Antonio Bay at Gulf of Mexico.

11)  Correct Answer: (b) 2 and 3 only

 Explanation:

- Statement 1 – Incorrect:
  - Dr. Syama Prasad Mookerjee formally joined the Hindu Mahasabha and became its Acting President in 1940.
  - His leadership role clearly shows official affiliation, so the statement is false.
- Statement 2 – Correct:
  - He was appointed as the Minister for Industry and Supply in Jawaharlal Nehru’s interim government(1946–47).
  - He contributed to early industrial development and economic planning in post-independence India.
- Statement 3 – Correct:
  - In 1951, Dr. Mookerjee founded the Bharatiya Jana Sangh, a political party that later evolved into the Bharatiya Janata Party (BJP).
  - The party promoted national integration and strong central governance.

12)  Correct Answer: (c) 1 and 2 only

 Explanation: Maratha Military Landscape

◆ Historical Significance:

- Represents a strategic military heritage from the 17th to 19th century CE.
- Showcases the military vision, tactical innovation, and architectural ingenuity of the Marathas.

◆ Geographical Distribution:

- Comprises twelve forts across diverse terrains — coastal outposts, hill forts, inland defense structures.
- Demonstrates strategic use of geography for fortification and defense.

◆ UNESCO World Heritage Tag:

- Recently inscribed in the **UNESCO World Heritage List (2024)**.
- Enhances India's cultural prestige and presence among countries with the **most World Heritage Sites**.

◆ **Administrative Mechanism:** The **Archaeological Survey of India (ASI)** acts as the **nodal agency** for all World Heritage nominations and site management in India.

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – Forts reflect the Marathas' **strategic military planning** adapted to terrain.
- **Statement 2: Correct** – ASI is the **authorized agency** for UNESCO-related matters.
- **Statement 3: Incorrect** – Not all forts are in Maharashtra; e.g., **Gingee Fort is in Tamil Nadu**.

13)  **Correct Answer: (d) 2 and 3 only**

🧠 **Explanation: Trans Fats**

◆ **Definition & Sources:**

- **Trans fats (Trans-fatty acids)** are unsaturated fats that may be:
  - **Industrially produced** via hydrogenation of vegetable oils.
  - **Naturally present** in animal products like meat and dairy.

◆ **Health Impact:**

- **Alters cholesterol balance:** Increases **LDL (bad cholesterol)** and decreases **HDL (good cholesterol)**.
- Leads to **arterial hardening**, causing **heart attacks and strokes**.

◆ **Broader Medical Risks:**

- Associated with **obesity, diabetes, high blood pressure, and chronic inflammation**.
- Increasing evidence links trans fats to **certain cancers**.

🔍 **Statement-wise Analysis:**

- **Statement 1: Incorrect** – Trans fats are **not exclusively industrial**; they also occur naturally.
- **Statement 2: Correct** – Linked to **inflammation, obesity, and some cancers**.
- **Statement 3: Correct** – Trans fats **elevate LDL cholesterol**, leading to **cardiovascular disease**.

14)  **Correct Answer: (c) 2 and 3 only**

🧠 **Explanation: Astra Missile**

◆ **Classification:**

- **Astra is a Beyond Visual Range Air-to-Air Missile (BVRAAM)**.
- Developed indigenously by the **Defence Research and Development Organisation (DRDO)**.

◆ **Operational Features:**

- Designed to **target supersonic, highly maneuverable enemy aircraft**.
- Works under **all-weather, day and night conditions**.
- Equipped with **indigenous Radio Frequency (RF) seeker** for advanced guidance.

🔍 **Statement-wise Analysis:**

- **Statement 1: Incorrect** – Astra is **not restricted** to favorable weather; it functions in **all conditions**.
- **Statement 2: Correct** – It is a **DRDO-developed BVRAAM**.
- **Statement 3: Correct** – Specifically engineered to **neutralize supersonic aerial threats**.

15)  **Correct Answer: (a) 1 and 2 only**

🧠 **Explanation: India-EFTA Trade Agreement**

◆ **About EFTA:**

- **European Free Trade Association (EFTA)** consists of: **Switzerland, Norway, Iceland, and Liechtenstein**.
- Functions as a **non-EU economic bloc**, promoting global FTAs.

◆ **India-EFTA TEPA:**

- India signed a **Trade and Economic Partnership Agreement (TEPA)** with EFTA in **2024**.
- **Switzerland** has already **ratified** the agreement.

◆ **Intellectual Property Provisions:** IPR commitments under TEPA are **in line with TRIPS** – not exceeding WTO obligations.

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – TEPA has been signed and **ratified by Switzerland**.
- **Statement 2: Correct** – All four nations are **full EFTA members**.
- **Statement 3: Incorrect** – TEPA's IPR commitments are **TRIPS-compliant, not beyond**.

16)  **Correct Answer: (a) 1 only**

🧠 **Explanation: Indian Missile Systems – Astra**

◆ **Astra Missile:**

- A **Beyond Visual Range Air-to-Air Missile (BVRAAM)**.
- Developed by **DRDO**, launched from platforms like **Su-30 MKI**.

◆ **Features:**

- **All-weather, day-night capable**.
- Effective beyond **100 km** range.
- Targets **supersonic maneuverable aircraft**.
- Uses **indigenous RF seeker** for precision.

◆ **Misclassification in Other Options:**

- **Akash** – A **Surface-to-Air Missile (SAM)**, not **surface-to-surface**.
- **BrahMos** – A **supersonic**, not **hypersonic** cruise missile.

🔍 **Option-wise Analysis:**

- **Option (a): Correct** – Astra is an **indigenous BVRAAM**.
- **Options (b), (c), (d): Incorrect** – Misrepresent other missile types.

17)  **Correct Answer: (d) 2 and 3 only**

🧠 **Explanation: AIANET (Artificial Intelligence Alliance Network)**

◆ **Nature and Structure:**

- AIANET is an **informal, voluntary network**.
- It is **not a treaty-based or legally binding** international organization.

◆ **Objectives:**

- Aims to **accelerate AI development and deployment**.
- Focuses on **sustainable prosperity, social and economic development**.

◆ **Membership and Administration:**

- Comprises **17 member countries**.
- **Administered by AI Alliance Russia**.

🔍 **Statement-wise Analysis:**

- **Statement 1: Incorrect** – AIANET is **not established under any binding international treaty**.
- **Statement 2: Correct** – It is currently **administered by AI Alliance Russia**.
- **Statement 3: Correct** – AIANET's key goal includes promoting the **use and development of AI technologies**.

18)  **Correct Answer: (d) 1, 2 and 3**

🧠 **Explanation: Gharial**

◆ **Conservation Status:**

- Listed as **Critically Endangered** on the **IUCN Red List**.
- Protected under **Schedule I of the Wildlife (Protection) Act, 1972**.
- Included in **Appendix I of CITES**.

### ◆ Physical Features:

- Possesses the **thinnest and most elongated snout** among crocodylians.
- Adult males develop a **bulbous nasal growth** called '**ghara**', used in mating displays.

### ◆ Habitat and Distribution:

- Highly aquatic species found in **freshwater river systems**.
- Major populations in **Chambal and Girwa Rivers (India)** and **Rapti-Naryani River (Nepal)**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Classified as **Critically Endangered** by IUCN.
- **Statement 2: Correct** – Males develop the '**ghara**' feature.
- **Statement 3: Correct** – Major habitats include **tributaries of the Ganga River**.

19)  **Correct Answer: (b) 2 and 3 only**

### 🧠 Explanation: Sloth Bear

### ◆ Distribution and Habitat:

- Native to **India, Nepal, and Sri Lanka**.
- Found in five biogeographic zones: **Peninsular India, Western Ghats, Deccan Plateau, Gangetic Plain, North-East India**.

### ◆ Conservation Status:

- Listed as **Vulnerable** on the **IUCN Red List**.
- Protected under **Schedule I** of the **Wildlife (Protection) Act, 1972**.
- Also included in **Appendix I** of **CITES**.

### ◆ Physical & Behavioral Traits:

- Has a **shaggy coat**, relatively **small body size**.
- **Primarily insectivorous**, feeds on **termites and ants** using long claws and suction.
- **Nocturnal** and **solitary** in nature.

### 🔍 Statement-wise Analysis:

- **Statement 1: Incorrect** – Sloth Bears are **not carnivores** feeding on large mammals; they are **insectivores**.
- **Statement 2: Correct** – Found in **five biogeographic zones** in India.
- **Statement 3: Correct** – Status is **Vulnerable (IUCN)** and protected under **Schedule I**.

20)  **Correct Answer: (b) 3 only**

### 🧠 Explanation: Pir Panjal Range

### ◆ Location and Extent:

- Located in **Jammu & Kashmir**.
- The **Kashmir Valley** lies between the **Pir Panjal and Zaskar Ranges**.
- Extends from the **Jhelum River to the upper Beas River**.

◆ **Geological Classification:** Belongs to the **Lesser Himalayas**, not the Greater Himalayas.

◆ **Rock Composition:** Primarily composed of **volcanic rocks**, not sedimentary.

◆ **River Systems:** Cut through by rivers such as **Chenab, Jhelum, and Kishanganga**.

◆ **Mountain Passes:** Contains important passes: **Pir Panjal Pass, Banihal, Bidil, and Golabghar Pass**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Incorrect** – It is part of the **Lesser Himalayas**, not Greater Himalayas.
- **Statement 2: Incorrect** – Composed of **volcanic rocks**, not sedimentary.
- **Statement 3: Correct** – **Jhelum and Chenab** rivers pass through the range.

21)  **Correct Answer: (c) Tackle financial crimes involving proceeds of illegal activities**

### 🧠 Explanation: Legal Framework Against Illegal Betting Apps

### ◆ Relevant Legislations:

- **Prevention of Money Laundering Act (PMLA), 2002:**
  - Designed to address **financial crimes** involving proceeds of **illegal activities**.
  - Used by **Enforcement Directorate (ED)** to take action against illegal betting app promoters.
- **Public Gambling Act, 1867:**
  - A **colonial-era legislation** regulating gambling activities in India.
  - Prohibits most forms of gambling, with limited exceptions for **games of skill**.

### ◆ Application Context:

- Enforcement agencies have invoked both laws to tackle the rise in **digital betting apps**.
- These apps often serve as channels for **money laundering**, prompting action under **PMLA**.

22)  **Correct Answer: (b) Supporting the all-round development of tribal students in Eklavya Model Residential Schools**

🧠 **Explanation: TALASH Initiative**

### ◆ About the Program:

- **TALASH** stands for **Tribal Aptitude, Life Skills and Self-Esteem Hub**.
- Launched by **National Education Society for Tribal Students (NESTS)** under **Ministry of Tribal Affairs**, in partnership with **UNICEF India**.

◆ **Target Group:** Specifically aims at students of **Eklavya Model Residential Schools (EMRSs)**.

### ◆ Program Features:

- Digital platform includes:
  - **Psychometric assessments** (inspired by NCERT's *Tamanna*).
  - **Career counseling**.
  - **Life skills and self-esteem** modules.
  - **Teacher support** tools and e-learning resources.

◆ **Objective:** Focuses on **holistic development** of tribal students — not just academics or infrastructure but also **emotional and personal growth**.

23)  **Correct Answer: (b) 2 only**

🧠 **Explanation: World Trade Organization (WTO)**

### ◆ Establishment:

- Created in **1995**, succeeding **GATT (1947)**.
- Unlike GATT, WTO is a **full-fledged international organization** with wider jurisdiction.

### ◆ Functions:

- Regulates **global trade in goods, services, and intellectual property**.
- Provides a platform for **negotiation and dispute resolution**.

### ◆ Decision-Making:

- Works on a **consensus-based** model — **not majority voting**.
- Every member must agree or not object to decisions.

◆ **Membership:** Comprises **166 members**, including India.

### ◆ Current Issues:

- **Appellate Body** of the Dispute Settlement Mechanism is **non-functional** since 2016.
- **North-South divide** and **rise in RTAs** challenge WTO's multilateralism.

🔍 **Statement Analysis:**

- **Statement 1: Incorrect** – WTO decisions are made by **consensus**, not by majority.
- **Statement 2: Correct** – WTO was established in **1995**, replacing GATT.
- **Statement 3: Incorrect** – The **Dispute Settlement Body** is currently **paralyzed**, not fully functional.

24)  **Correct Answer: (a) 1 only**

🧠 **Explanation: PMLA and Gambling Regulation**

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### ◆ Prevention of Money Laundering Act (PMLA), 2002:

- Framework for **prevention, control, and prosecution** of money laundering.
- Empowers **confiscation** of illegally acquired property.

### ◆ Implementing Agencies:

- **FIU-IND**: Collects and disseminates **financial intelligence**.
- **Enforcement Directorate (ED)**: Investigates and prosecutes offences under PMLA.

### ◆ Gambling Laws:

- **Public Gambling Act, 1867**: Governs gambling but is **state-regulated**, as gambling falls under the **State List** (List II) in the Constitution.
- States have the authority to **formulate independent gambling laws**.

### ◆ Recent Context: Action against celebrities promoting illegal apps used **PMLA + Public Gambling Act**.

### 🔍 Statement Analysis:

- **Statement 1: Correct** – FIU-IND is a designated authority under PMLA.
- **Statement 3: Incorrect** – Gambling is a **State Subject**, not under the Union List.

25)  Correct Answer: (b) 1 and 3 only

### 🧠 Explanation: Panch Sankalp under National Education Policy (NEP) 2020

### ◆ NEP 2020 Overview:

- Major policy reform for education in India.
- Pillars: **Access, Equity, Quality, Affordability, Accountability**.

### ◆ Panch Sankalp:

- A reform measure introduced to transform **higher education** institutions.
- Consists of **five resolutions**:
  1. **Next-Gen Emerging Education**
  2. **Multidisciplinary Education**
  3. **Innovative Education**
  4. **Holistic Education**
  5. **Bharatiya Education**

### ◆ Objectives:

- Enhance **enrollment, gender parity, and quality of higher education**.
- Align India's institutions with **global benchmarks** while nurturing **Indian knowledge systems**.

🔍 Option Analysis: Option (b): Correct – Panch Sankalp aims to **transform higher education** through five key resolutions.

26)  Correct Answer: (c) Both 1 and 2

### 🧠 Explanation: Reservations in Local Bodies

### ◆ Constitutional Framework:

- **Article 243D**: Pertains to reservations in **Panchayats**.
- **Article 243T**: Pertains to reservations in **Municipalities**.
- Introduced via the **73rd and 74th Constitutional Amendments**.

### ◆ Reservation Provisions:

- Reservation for **Scheduled Castes (SCs)** and **Scheduled Tribes (STs)** based on **population**.
- At least **one-third of the seats** are reserved for **women**.
- States may additionally **reserve seats for Backward Classes (OBCs)**.

### ◆ Additional Provisions:

- Seats and **Chairperson posts** may also be **reserved and rotated** to ensure equitable representation.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – States are empowered to **determine reservation** for Backward Classes in local bodies.

- **Statement 2: Correct** – Articles 243D and 243T were introduced via the **73rd and 74th Amendments** to institutionalize grassroots democracy.

27)  **Correct Answer: (a) 1 only**

 **Explanation: S-400 Air Defence System**

 **Origin:**

- Acquired by India from **Russia**.
- Considered among the **most advanced long-range air defence systems** globally.

 **Technical Capabilities:**

- Altitude engagement range: **30 meters to 30 kilometers**.
- Engagement range: up to **400 km**.
- Tracking range: up to **600 km**.
- Can simultaneously track and engage **multiple aerial targets**.

 **Indian Context:**

- Referred to as "**Sudarshan Chakra**" in India (informal name).
- Indigenous efforts focus on **Maintenance, Repair & Overhaul (MRO)**, not development.

 **Statement-wise Analysis:**

- **Statement 1: Correct** – S-400 can intercept aerial threats from **very low to high altitudes**.
- **Statement 3: Incorrect** – It is **not indigenous**; developed by **Russia**.

28)  **Correct Answer: (c) Both 1 and 2**

 **Explanation: Traditional Indian Knowledge System (IKS)**

 **Scope and Definition:** Encompasses **traditional sciences, arts, philosophy, and technologies** preserved in **Sanskrit, Tamil, Prakrit, and Pali**.

 **Ancient Learning Institutions:** **Takshashila, Nalanda, Vikramashila, Vallabhi, and Odantapuri** were renowned as **global centers of learning**.

 **Preservation Measures:**

- Initiatives include:
  - **Traditional Knowledge Digital Library (TKDL)**
  - **Indian Knowledge Systems (IKS) Division**
  - **Project Mausam**
  - **Biological Diversity Act**

 **Contemporary Relevance:** Helps in **decolonizing knowledge systems**, promoting **indigenous traditions**, and enhancing **India's soft power**.

 **Statement-wise Analysis:**

- **Statement 1: Correct** – TKDL (2001) was launched to **prevent misappropriation** of Indian traditional knowledge.
- **Statement 2: Correct** – Ancient universities like **Nalanda and Takshashila** attracted scholars from **Asia**.

29)  **Correct Answer: (c) Both 1 and 2**

 **Explanation: WASH (Water, Sanitation and Hygiene)**

 **Definition:** WASH is an umbrella term for **access to clean water, improved sanitation, and basic hygiene** practices.

 **Global Recognition:** In **2010**, the **United Nations** recognized **access to clean water and sanitation** as **basic human rights**.

 **Sustainable Development Linkage:**

- Strongly linked to:
  - **SDG 3** – Good health and well-being
  - **SDG 6** – Clean water and sanitation

 **Legal Framework: Protocol on Water and Health (Europe):** Only international treaty linking **water management with disease prevention**.

 **Statement-wise Analysis:**

- **Statement 1: Correct** – UN has recognized water and sanitation as **human rights**.
- **Statement 2: Correct** – WASH is crucial to **SDG 3 and SDG 6**.

30)  **Correct Answer: (c) Both 1 and 2**

 **Explanation: Autonomous District Councils (ADCs)**

◆ **Constitutional Basis:** Established under **Sixth Schedule** of the Constitution for **tribal self-governance** in NE India.

◆ **Composition:**

- Typically **30 members** (elected + nominated).
- **Governor** can nominate up to **4 members**.

◆ **Administrative & Legislative Powers:**

- Jurisdiction over:
  - **Education**
  - **Health**
  - **Land and forest management**
  - **Social customs and laws**

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – ADCs oversee **education and health** in tribal areas.
- **Statement 2: Correct** – The **Governor can nominate up to four members**.

31)  **Correct Answer: (a) An informal value transfer system operating outside the conventional banking channels**

 **Explanation: Hawala System**

◆ **Definition and Functioning:** Hawala is an **informal value transfer system** operating on **trust**, outside of formal banking networks.

- No **physical transfer of money** occurs — money is settled later between **hawaladars (brokers)**.

◆ **Historical Context:** Originated in **South Asia and the Middle East**; used by merchants to transfer money across long distances **without carrying cash**.

◆ **Use Cases:**

- Used in regions with **limited banking infrastructure**.
- Supports **remittances, small trade**, and other **informal economic activities**.

◆ **Security Concerns:**

- **Exploited for terror financing** (e.g., by **Al-Shabaab, Hamas**).
- Hard to trace due to **lack of documentation and institutional oversight**.

🔍 **Option-wise Analysis:**

- **(a) Correct** – Hawala is an informal system operating outside regulated financial channels.
- **(b) Incorrect** – Not about **regulated currency exchanges**.
- **(c) Incorrect** – Not a **digital or cryptocurrency platform**.
- **(d) Incorrect** – Hawala is **used to evade detection**, not a detection method.

32)  **Correct Answer: (d) All four**

 **Explanation: Shadow Banking System**

◆ **Concept:** Comprises **financial intermediaries** that operate **outside formal banking** but provide **similar services** like credit intermediation.

◆ **Entities Included:**

- **Money Market Funds**
- **Hedge Funds**
- **Private Equity Funds**
- **Securitization Vehicles** (e.g., Asset-Backed Securities)

◆ **Risks:**

- **Lack of transparency**, regulatory arbitrage, and **contagion risk** during financial stress.
- No access to **central bank support** or **deposit insurance**.

🔍 **Option Analysis: (d) Correct** – All mentioned institutions fall under the **definition of shadow banking** as per global financial standards.

## An Institute for Civil Services

33)  Correct Answer: (b) 1 and 3 only

 Explanation: Aspirational DMF Programme

◆ Objective: Align District Mineral Foundation (DMF) schemes with Aspirational District Programme (ADP) and Aspirational Blocks Programme (ABP).

◆ Implementing Agency: Launched by the Union Ministry of Mines, not NITI Aayog (which runs ADP/ABP independently).

◆ Basis:

- Rooted in the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY).
- DMFs are set up under Section 9(B) of the MMDR Act, 1957.

◆ Priority Sectors:

- Health and Nutrition
- Education
- Agriculture & Water
- Basic Infrastructure
- Social Development

 Statement-wise Analysis:

- Statement 1: Correct – Program aims to converge DMF with ADP/ABP.
- Statement 2: Incorrect – Implemented by Ministry of Mines, not NITI Aayog.
- Statement 3: Correct – Focuses on priority sectors.

34)  Correct Answer: (a) 1, 2 and 3

 Explanation: Internationalization of UPI

◆ UPI Expansion:

- Recent agreement with Namibia to adopt UPI for real-time payments.
- Spearheaded by NPCI International Payments Ltd. (NIPL).

◆ Current Presence: UPI services are accepted in Bhutan, France, Mauritius, Nepal, Singapore, Sri Lanka, UAE.

◆ Institutional Support: NIPL, a wholly owned subsidiary of NPCI, promotes UPI and RuPay internationally.

◆ Broader Goals: Enhances digital diplomacy, global financial inclusion, and payment interoperability.

 Statement-wise Analysis:

- Statement 1: Correct – Namibia agreement confirmed during PM's visit.
- Statement 2: Correct – UPI launched by NPCI in 2016.
- Statement 3: Correct – NIPL established in 2020 to push UPI globally.

35)  Correct Answer: (c) 2 and 3 only

 Explanation: Emerging Methods of Terrorist Financing

◆ Digital Finance Tools: Use of cryptocurrencies and blockchain due to pseudonymity and global accessibility.

◆ Social Media Use: Fundraising via campaigns, direct links, and financial coordination through social platforms.

◆ Legal Covers: Misuse of shell companies, NGOs, and front organizations for fund transfers.

◆ Misconception: Cryptocurrencies are not fully anonymous; blockchain analysis can uncover patterns.

 Statement-wise Analysis:

- Statement 1: Incorrect – Cryptocurrencies offer pseudonymity, not anonymity.
- Statement 2: Correct – Social media is used for terrorist fundraising.
- Statement 3: Correct – Legal covers like shell firms are widely exploited.

36)  Correct Answer: (b) 2 and 3 only

 Explanation: Indian National Space Promotion and Authorization Centre (IN-SPACE)

### ◆ Institutional Structure:

- **IN-SPACE** is an **autonomous agency** under the **Department of Space**, operating **independently from ISRO**.
- It serves as a **regulatory and promotional body** to facilitate **private participation** in the Indian space ecosystem.

### ◆ Purpose and Role:

- Created as part of the **2020 Space Sector Reforms**.
- Aims to build a **level playing field** for private players.
- Facilitates access to **ISRO facilities** and promotes **space innovation**.

### ◆ Strategic Support:

- Administers a **Venture Capital Fund** for space tech startups.
- Has been instrumental in enabling **private sector space launches and collaborations**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Incorrect** – IN-SPACE is not a part of ISRO but an **autonomous body** under the Department of Space.
- **Statement 2: Correct** – It manages a **Venture Capital Fund** to support innovation.
- **Statement 3: Correct** – IN-SPACE was established under the **2020 Space Sector Reforms**.

37)  Correct Answer: (a) 1 only

🧠 Explanation: Satellite Communication Services and Indian Space Policy

### ◆ Service Characteristics:

- Satellite communications function **independent of terrestrial infrastructure**.
- Critical for **disaster relief, remote connectivity, and rural outreach**.

### ◆ Indian Space Policy 2023:

- **Liberalized** policy encouraging **private sector** and **Non-Government Entities (NGEs)** in **all segments** — including **satellite manufacturing, launches, and services**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Satellite communications provide **connectivity without needing physical infrastructure**.
- **Statement 2: Incorrect** – The 2023 policy does allow NGEs to participate in **satellite manufacturing**, contrary to the claim.

38)  Correct Answer: (b) 2 only

🧠 Explanation: Mahi River

### ◆ Geographic Overview:

- Originates in the **Vindhya Range** (Madhya Pradesh), not the Aravallis.
- Flows through **Madhya Pradesh, Rajasthan, and Gujarat**, draining into the **Arabian Sea**.

### ◆ Unique Features:

- **Crosses the Tropic of Cancer twice** — a rare feature among Indian rivers.
- Takes a **zigzag course**, influenced by local topography.

### 🔍 Statement-wise Analysis:

- **Statement 1: Incorrect** – Mahi originates from the **Vindhyas**, not the **Aravalli Hills**.
- **Statement 2: Correct** – Mahi is notable for its **zigzag course** and for **crossing the Tropic of Cancer twice**.

39)  Correct Answer: (c) A permanent desert lake

🧠 Explanation: Lake Turkana

### ◆ Geographical Location:

- Located mostly in **Kenya**, with a portion extending into **Ethiopia**.
- Recognized as an **international lake**.

### ◆ Distinctive Features:

- World's **largest permanent desert lake**.
- **Fourth largest lake in Africa**.

### ◆ Hydrological Significance:

- **Omo River** (Ethiopia) is its **only perennial tributary**.
- Supports a unique **aquatic ecosystem** in an arid zone.

### ◆ Heritage and Importance:

- Region is a **UNESCO World Heritage Site** due to **paleontological finds**.

### 🔍 Option Analysis:

- **Option (c): Correct** – Lake Turkana is known as the **largest permanent desert lake** globally.

40) **✔ Correct Answer: (b) 1 and 3 only**

### 🧠 Explanation: Non-Banking Financial Companies (NBFCs) in India

#### ◆ Regulatory Framework:

- Governed by the **Reserve Bank of India (RBI)**.
- Subject to **capital adequacy, prudential norms, and governance standards**.

#### ◆ Functional Scope:

- Offer financial services like **loans, leasing, investments**, etc.
- However, they **cannot accept demand deposits**, unlike banks.

#### ◆ Role in the Economy:

- Serve **underserved sectors** such as **MSMEs, rural populations, and informal economy**.
- Act as a **complementary force** to the banking sector.

#### ◆ Recent Trends:

- NBFCs are being brought under **stricter supervision** to reduce systemic risks.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – NBFCs are regulated by **RBI**.
- **Statement 2: Incorrect** – NBFCs **cannot accept demand deposits**.
- **Statement 3: Correct** – Subject to **strengthened regulatory norms**.

41) **✔ Correct Answer: (c) It is essential for capturing and converting sun's energy and stimulating root development**

### 🧠 Explanation: Role of Phosphorous in Plant Growth

#### ◆ Key Functions of Phosphorous:

- **Energy Conversion:** Integral in **photosynthesis and metabolic energy transfer** (via ATP).
- **Root Development:** Supports **strong root growth**, improving nutrient uptake and plant vigor.
- **Reproductive Growth:** Crucial for **flowering, seed formation, and nitrogen fixation in legumes**.

#### ◆ Agricultural Innovation:

- Technologies like **CRISPR-Cas9** are being applied in crops (e.g., rice) to **enhance phosphorous uptake**.

### 🔍 Option-wise Analysis:

- **(a): Incorrect** – Cellulose forms plant cell walls; phosphorous is not a structural component.
- **(b): Incorrect** – Nitrogen fixation is mainly bacterial; phosphorous supports but doesn't perform this function.
- **(c): Correct** – Accurately highlights **phosphorous's central role** in **energy capture** and **root development**.
- **(d): Incorrect** – **Potassium**, not phosphorous, regulates water transpiration.

42) **✔ Correct Answer: (d) It seeks to put a fair price on carbon emitted during production of carbon intensive goods entering the EU**

### 🧠 Explanation: Carbon Border Adjustment Mechanism (CBAM)

#### ◆ Objective:

- Aims to **prevent carbon leakage** by taxing carbon-intensive imports to the EU.
- Ensures **equal treatment** between EU industries and foreign producers.

### ◆ Implementation Timeline:

- **Transition phase:** 2023–2025
- **Full implementation:** From 2026

### ◆ Global Reception:

- Criticized by **developing countries**, including **BRICS nations**, as a **unilateral, trade-distorting policy**.

### 🔍 Option-wise Analysis:

- **(a): Incorrect** – CBAM is a **tax mechanism**, not a financial aid scheme.
- **(b): Incorrect** – Not under the **WTO** or a multilateral framework.
- **(c): Incorrect** – Doesn't involve **carbon credit trading systems** across countries.
- **(d): Correct** – Its **core aim** is to **tax imports based on carbon emissions** during production.

43)  **Correct Answer: (c) The size of the population that can be supported indefinitely upon the available resources of an ecosystem**

### 🧠 Explanation: Ecological Carrying Capacity

◆ **Definition:** Represents the **maximum sustainable population** that an ecosystem can support without degradation.

### ◆ Determining Factors:

- **Resource availability, population density, and consumption patterns.**
- Influenced by **technology**, but constrained by **ecological limits**.

◆ **Application:** Used in **urban planning, wildlife management, and resource policy** (e.g., **Uttarakhand's ecological limits study**).

### 🔍 Option-wise Analysis:

- **(a): Incorrect** – Refers specifically to **tourism**, not overall ecological capacity.
- **(b): Incorrect** – Structural engineering term, not ecological.
- **(c): Correct** – Accurately defines **ecological carrying capacity**.
- **(d): Incorrect** – Refers to **transport systems**, not ecological environments.

44)  **Correct Answer: (d) Bluetooth Low Energy Mesh Networking**

### 🧠 Explanation: Bitchat – Peer-to-Peer Communication App

◆ **Functional Design:** Decentralized **peer-to-peer messaging** system without traditional mobile networks or servers.

### ◆ Core Technology:

- Uses **Bluetooth Low Energy (BLE) Mesh Networking**:
  - Devices form a **local mesh network**
  - Enables **multi-hop message relaying**.

### ◆ Privacy & Security:

- No registration required.
- Messages are **end-to-end encrypted** and **auto-deleted** for security.

### 🔍 Option-wise Analysis:

- **(a): Incorrect** – No use of **quantum encryption**.
- **(b): Incorrect** – Doesn't utilize **blockchain technology**.
- **(c): Incorrect** – Not **satellite-based**.
- **(d): Correct** – Relies on **Bluetooth LE Mesh** for messaging.

45)  **Correct Answer: (b) 2 only**

### 🧠 Explanation: PARAKH – National Assessment Centre

### ◆ Institutional Framework:

- Launched in **2023** as an **independent unit under NCERT**.
- Mandated by the **National Education Policy (NEP) 2020**.

### ◆ Core Functions:

- Sets **standards for student assessment** across India.
- Conducts **PARAKH RS**, formerly known as the **National Achievement Survey (NAS)**.

◆ **Policy Significance:** Helps assess learning outcomes and inform **policy-level educational decisions**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Incorrect** – PARAKH **did not replace** NAS; it evolved from it.
- **Statement 2: Correct** – NEP 2020 provided for the establishment of PARAKH.

46)  **Correct Answer: (c) 1, 2 and 3**

🧠 **Explanation: Rare Earth Elements (REE) in India**

### ◆ Global Context:

- India has the **third-largest reserves** of REEs.
- **China dominates** global REE mining and refining: **~69% mining, ~90% refining**.

### ◆ Indian Deposits:

- Found primarily in **monazite sands** along **coastal states** — Tamil Nadu, Kerala, Andhra Pradesh, Odisha.
- Monazite also contains **thorium**, adding regulatory complications.

### ◆ Processing Limitations:

- **IREL (India) Limited**, a Mini Ratna PSU, is the **only processor** of monazite to extract RE compounds.
- India lacks **facilities to make RE alloys and magnets** — only produces **oxides and some metals**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Coastal states hold significant REE deposits.
- **Statement 2: Correct** – IREL is India's **sole processor** of REEs from monazite.
- **Statement 3: Correct** – Despite vast reserves, India contributes **<1% to global REE mining**.

47)  **Correct Answer: (d) 1, 2 and 3**

🧠 **Explanation: Kharai Camels**

### ◆ Origin & Habitat:

- Indigenous to the **Kutch region of Gujarat**.
- Adapted to **desert and saline coastal ecosystems**.

### ◆ Unique Traits:

- Capable of **swimming in the sea**.
- Graze on **mangroves** — rare among camel breeds.

### ◆ Cultural and Nutritional Significance:

- Preserved by **Rabari and Fakirani Jat tribes** for over **400 years**.
- **Milk is nutrient-rich** and has potential **therapeutic benefits**.

### 🔍 Statement-wise Analysis:

- **Statement 1: Correct** – Name "Kharai" derived from "Khara" (saline).
- **Statement 2: Correct** – Known for swimming and grazing in mangroves.
- **Statement 3: Correct** – Tribes have preserved this breed **historically**.

48)  **Correct Answer: (d) 1 and 3 only**

🧠 **Explanation: BIND Scheme (Broadcasting Infrastructure and Network Development)**

◆ **Nature of the Scheme: Central Sector Scheme**, fully funded and implemented by the **central government**.

◆ **Nodal Ministry:** Administered by the **Ministry of Information and Broadcasting**.

◆ **Objectives:**

- Supports **Prasar Bharati** (AIR & Doordarshan) for:
  - **Upgrading infrastructure**
  - **Developing content**
  - **Expanding coverage**

◆ **Recent Implementation:** Example: **New Akashvani Kendra in Ujjain** under BIND Scheme.

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – Scheme supports both **AIR and DD** infrastructure upgrades.
- **Statement 2: Incorrect** – BIND is a **Central Sector Scheme**, not Centrally Sponsored.
- **Statement 3: Correct** – Provides **financial assistance to Prasar Bharati**.

49)  **Correct Answer: (a) 1, 2 and 3**

🧠 **Explanation: National Commission for Scheduled Castes (NCSC)**

◆ **Constitutional Basis:**

- Created via the **89th Constitutional Amendment Act, 2003**.
- Split the original combined commission into:
  - **NCSC (Article 338)**
  - **NCST (Article 338-A)**

◆ **Powers & Structure:**

- Has powers of a **civil court**.
- Comprises **Chairperson, Vice-Chairperson**, and **three members** appointed by the **President**.

◆ **Functions:**

- Investigates and monitors **safeguards for SCs**.
- Submits **annual reports** to the President.

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – Possesses powers similar to a **civil court**.
- **Statement 2: Correct** – Established through the **89th Amendment**.
- **Statement 3: Correct** – Resulted from the **split of earlier combined commission**.

50)  **Correct Answer: (c) 1 and 2 only**

🧠 **Explanation: Global and Indian Rare Earth Element (REE) Landscape**

◆ **Global Scenario:** China leads REE production: **~69% of mining**, **~90% refining** capacity.

◆ **India's Potential:**

- India ranks **third in global REE reserves**.
- Most REEs in India are **Light Rare Earth Elements (LREEs)** found in **monazite sands**.
- No significant **extractable Heavy Rare Earth Elements (HREEs)**.

◆ **Regulatory Constraints:** **Coastal Regulation Zone (CRZ)** norms restrict mining activities in **coastal zones** where REEs are located.

🔍 **Statement-wise Analysis:**

- **Statement 1: Correct** – CRZ rules **limit REE extraction** in coastal areas.
- **Statement 2: Correct** – China is the **dominant player** in mining and refining.
- **Statement 3: Incorrect** – India lacks **extractable quantities** of HREEs.