

Solutions

DATE : (22nd Dec- 28th Dec)

1) Answer (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

Explanation

Statement-I: Aravalli range restricts the eastward expansion of the Thar Desert ✓

- The Aravalli Range acts as a **geomorphological and ecological barrier**, reducing **desertification and dust storm intensity** toward the **fertile plains of eastern Rajasthan, Haryana, and western UP**.
- It supports **vegetation cover, soil moisture retention, and groundwater recharge**, thereby protecting adjacent agro-ecological zones.

Statement-II: Aravalli range influences monsoon movement and rainfall distribution ✓

- The Aravallis **interact with monsoon winds**, affecting **rainfall distribution** in regions further east and north (e.g., **Shimla, Nainital**).
- This reflects a **climatic modulation role**, but it **does not directly explain** the desert-barrier function stated in Statement-I.

2) Answer (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

Explanation

Statement-I: Kuttanad is the only region in India with below-sea-level rice cultivation ✓

- Kuttanad (Kerala) practices **below mean sea level paddy cultivation**, using **bunds, pumps, and controlled drainage**—a unique adaptation to wetland conditions.

Statement-II: FAO recognized Kuttanad as a GIAHS site ✓

- The FAO's GIAHS recognition acknowledges **heritage value, sustainability, and traditional knowledge systems** of Kuttanad.
- While both statements are correct, **recognition does not explain the below-sea-level cultivation practice**.

3) Answer (c) Both I and II

Explanation

Statement (I): Habitat loss and infrastructure pose the main threat to GIB ✓

- The Great Indian Bustard (GIB) faces severe threats from **habitat fragmentation and overhead power lines**, leading to high mortality.

Statement (II): GIB has the highest legal protection ✓

- Listed under **Schedule I of the Wildlife (Protection) Act, 1972** and **Appendix I of CITES**, the GIB enjoys **maximum legal protection** nationally and internationally.
- Recent **Supreme Court interventions** underscore urgent conservation measures in renewable energy corridors.

4) Answer (c) Both I and II

Explanation

Statement (I): Lothal features the oldest known man-made dockyard ✓

- Lothal, an Indus Valley Civilization site, is renowned for its **ancient dockyard**, evidencing early maritime trade.

Statement (II): NMHC is part of the Sagarmala Programme and located at Lothal ✓

- The National Maritime Heritage Complex (NMHC) is a **Sagarmala flagship project** at **Lothal, Gujarat**, aimed at showcasing India's **maritime heritage** through museums and cultural infrastructure.

5) Answer (b) II only

Explanation

Statement (I): GeM is for private procurement ✗

- Government e-Marketplace (GeM) is exclusively for **government entities and PSUs**, not for private procurement.

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Statement (II): GeM is a Section 8 company under the Ministry of Commerce and Industry ✓

- GeM operates as a **Section 8 (not-for-profit) company** under the **Ministry of Commerce and Industry**, enhancing **transparency, efficiency, and accountability** in public procurement.

6) Answer (a) I and IV only

Explanation

Statement (I): Kilonova results from merger of neutron stars formed post-supernova ✓

- In a **superkilonova**, a **massive star first undergoes a supernova**, forming **neutron stars**, which subsequently **merge** to produce a **kilonova**.
- This merger drives **r-process nucleosynthesis**, forming **heavy elements beyond iron**.

Statement (II): Every supernova is followed by a kilonova ✗

- Superkilonovae are extremely rare; most supernovae **do not** lead to neutron star mergers.

Statement (III): Supernova marks the end of a massive star (as an answer component) ✗

- While factually true, this statement **does not directly define or characterize a superkilonova**, hence incorrect in this context.

Statement (IV): Superkilonova involves a supernova followed by a kilonova from the same source ✓

- This captures the **defining sequence** of the phenomenon: **supernova → kilonova** linked to the **same progenitor system**.

7) Answer (d) II, III and IV only

Explanation

Statement (I): Southern Ocean lies north of 60°S ✗

- The **Southern (Antarctic) Ocean** is conventionally defined as **south of 60°S latitude**, encircling Antarctica.

Statement (II): Also referred to as the Antarctic Ocean ✓

- The Southern Ocean is **also known as the Antarctic Ocean**.

Statement (III): Includes Ross Sea and Weddell Sea ✓

- Major marginal seas include the **Ross Sea** and **Weddell Sea**, among others.

Statement (IV): One of the five major ocean basins ✓

- Recognized as one of the **five major oceans** of the world.

8) Answer (d) I, II and III only

Explanation

Statement (I): Paired attacker device gains full account access ✓

- Once approved, the attacker's device becomes a **hidden trusted linked device** with **full access**.

Statement (II): No password or SIM access required ✓

- **GhostPairing** exploits **WhatsApp's device-linking feature**, bypassing password/SIM requirements.

Statement (III): User is tricked into approving a fake pairing code ✓

- The scam relies on **social engineering**, deceiving users into **approving a fraudulent pairing request**.

Statement (IV): All cyber scams require access to phone/SIM ✗

- **Not true**; GhostPairing specifically **does not** require such access.

9) Answer (d) I, II and IV only

Explanation

Statement (I): Aluminium becomes more toxic as soil pH falls below 5 ✓

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- Acidic soils increase aluminium solubility, intensifying toxicity.

Statement (II): Aluminium toxicity disrupts nutrient uptake ✓

- Excess aluminium inhibits absorption of calcium, potassium, phosphorus, magnesium, etc.

Statement (III): Aluminium improves nutrient uptake ✗

- This is incorrect; aluminium disrupts nutrient uptake and plant physiology.

Statement (IV): Aluminium damages plant roots ✓

- Toxic aluminium impairs root growth, reducing water and nutrient absorption.

10) Answer (c) III only

Explanation

Statement (I): India is 100% import-dependent for lithium, cobalt, nickel ✗

- India is highly import-dependent, but not 100%; limited domestic and overseas-linked sources exist.

Statement (II): Only 15% of India explored in detail ✗

- While exploration coverage is limited, the figure and framing are not accurate for this assertion.

Statement (III): India is largely self-sufficient in bauxite, chromite, limestone ✓

- India has adequate domestic reserves and production capacity in several bulk and industrial minerals, supporting self-sufficiency.

11) Answer (c) Electoral Trusts must distribute 95% of total contributions received to registered political parties

Explanation

Option (a): Electoral Trusts must distribute at least 80% of contributions ✗

- The Electoral Trusts Scheme, 2013 mandates a much higher threshold than 80%.

Option (b): Electoral Trusts cannot receive contributions from companies ✗

- Electoral Trusts are explicitly permitted to receive donations from individuals and corporate entities, subject to disclosure norms.

Option (c): Electoral Trusts must distribute 95% of total contributions ✓

- The Scheme mandates that at least 95% of total annual receipts must be distributed to registered political parties within the same financial year.
- This provision ensures minimal fund retention, enhancing transparency and accountability in political funding.

Option (d): Electoral Trusts can retain all contributions ✗

- Retention beyond 5% is not permitted under the Scheme.

12) Answer (a) A longevity-linked enzyme that regulates tryptophan metabolism

Explanation

Option (a): Longevity-linked enzyme regulating tryptophan metabolism ✓

- SIRT6 (Sirtuin-6) is a mammalian enzyme involved in DNA repair, metabolism, and neuroprotection.
- It regulates tryptophan metabolism, balancing pathways for energy production and neurotransmitter synthesis (serotonin, melatonin), thereby supporting brain health and healthy aging.

Option (b): Industrial catalyst for biofuels ✗

- SIRT6 has no industrial or biofuel-related role.

Option (c): Enzyme involved in nitrogen fixation ✗

- Nitrogen fixation enzymes (e.g., nitrogenase) are found in bacteria, not mammals.

Option (d): Plant hormone regulating growth ✗

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- SIRT6 is not a hormone and not plant-related.

13) Answer (c) New Zealand is India's second largest trading partner in Oceania

Explanation

Option (a): FTA excludes services and skilled mobility ✗

- The India-New Zealand FTA includes services, investment, and skilled professional mobility.

Option (b): FTA is limited to digital trade ✗

- The agreement is comprehensive, covering goods, services, agriculture, health cooperation, and more.

Option (c): New Zealand is India's second largest trading partner in Oceania ✓

- New Zealand holds strategic importance as India's second largest trading partner in the Oceania region, underscoring the FTA's relevance for trade diversification.

Option (d): Agricultural products are excluded from zero-duty access ✗

- The FTA provides zero-duty access, including for agricultural products, subject to agreed schedules.

14) Answer (d) Identify mobile numbers potentially involved in financial fraud

Explanation

Option (a): Certification tool for fintech platforms ✗

- FRI does not certify platforms or entities.

Option (b): Creditworthiness assessment of financial institutions ✗

- FRI does not assess credit risk or solvency.

Option (c): Monitoring cross-border tax evasion ✗

- Tax monitoring falls under revenue authorities, not FRI.

Option (d): Identifying mobile numbers linked to financial fraud ✓

- The Financial Fraud Risk Indicator (FRI) flags mobile numbers based on risk levels (medium/high/very high) using inputs from banks, telecom operators, law enforcement, and citizens.
- It enables real-time preventive action against phishing, scam calls, and digital fraud.

15) Answer (d) II and III only

Explanation

Statement (I): Personality rights include only the right to privacy ✗

- Personality rights include both:
 - Right to Privacy
 - Right to Publicity
- Hence, the statement is incorrect.

Statement (II): Article 21 provides for the right to privacy ✓

- The Right to Privacy is a fundamental right under Article 21 of the Constitution.

Statement (III): K.S. Puttaswamy judgment affirmed the right to privacy ✓

- The Supreme Court in K.S. Puttaswamy v. Union of India (2017) unequivocally recognized privacy as a fundamental right, forming the constitutional basis of personality rights in India.

16) Answer (b) I, III and IV only

Explanation

Statement (I): Central Government approval is mandatory for diversion of forest land ✓

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- Under the **Forest (Conservation) Act, 1980**, prior approval of the **Central Government** is compulsory for diversion of forest land for **non-forest purposes**.
- This provision was upheld in landmark judgments such as **T.N. Godavarman Thirumulpad v. Union of India**, reinforcing strict central oversight.

Statement (II): Advisory Committee is constituted by the State Government ✗

- The **Advisory Committee** under the Act is constituted by the **Central Government**, not the State Government.
- It advises the Centre on proposals for forest land diversion.

Statement (III): The Act applies to all categories of government-recognised forest land ✓

- The Act covers **Reserved Forests, Protected Forests, and all government-recorded forest lands**, irrespective of ownership.

Statement (IV): Conservation and regulated use of forest land are the objectives ✓

- The core objective of the Act is **forest conservation and regulation of land-use change**, not revenue maximisation.

17) Answer (b) I and III only**Explanation****Statement (I): Centres of Excellence in central universities for PESA capacity-building** ✓

- The government has initiated **Centres of Excellence** in **central universities** to strengthen **PESA implementation**, research, and training.

Statement (II): Training manuals translated only into Hindi and English ✗

- PESA training material has been translated into **multiple regional and tribal languages**, beyond Hindi and English, to ensure **inclusive tribal outreach**.

Statement (III): PESA-GPDP Portal aids planning and monitoring in Scheduled Areas ✓

- The **PESA-GPDP Portal** integrates **participatory planning, monitoring, and accountability** for development works in **Fifth Schedule Areas**.

18) Answer (c) Only three**Explanation****Pair (1): Data Phishing – ransomware locking files for ransom** ✗

- **Data phishing** involves tricking users into revealing **passwords, OTPs, or credentials**, not ransomware-based file locking (which is **ransomware**).

Pair (2): Pig Butchering – fake relationships/jobs leading to financial fraud ✓

- Victims are emotionally or professionally groomed and later induced into **fraudulent investments or transfers**.

Pair (3): Instant Loan Apps – data misuse and harassment ✓

- Fraudsters misuse **contacts, photos, and personal data** to **blackmail borrowers**.

Pair (4): Phantom Hacking – impersonation and fear-based fund transfer ✓

- Scammers impersonate officials, claim devices are hacked, and coerce victims into **transferring money**.

19) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I**Explanation****Statement-I: PESA empowers Gram Sabhas with legal supremacy in Fifth Schedule Areas** ✓

- PESA Act, 1996 grants **Gram Sabhas overriding authority** over land, resources, and cultural matters in **Scheduled Areas**.

Statement-II: PESA institutionalises traditional tribal rights via mandatory consent ✓

- Mandatory **Gram Sabha consent** for land acquisition, mining, and MFP management **explains how and why** Gram Sabhas gain supremacy.
- Thus, Statement-II **logically explains** Statement-I.

20) Answer (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I**Explanation**

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Statement-I: FRI provides early fraud warnings to banks and financial institutions ✓

- The Financial Fraud Risk Indicator (FRI) flags mobile numbers involved in suspected fraud, enabling preventive action by banks and FIs.

Statement-II: FRI is a component of the Digital Intelligence Platform (DIP) ✓

- DIP enables real-time intelligence sharing among banks, telecom operators, police, and security agencies.
- While true, this statement does not directly explain how FRI functions as a warning tool, making the relationship non-explanatory.

21) Answer (c) Both I and II

Explanation

Statement (I): ICAO is a specialized UN agency under the Chicago Convention ✓

- The International Civil Aviation Organization (ICAO) was established under the Chicago Convention, 1944.
- It functions as a specialized agency of the United Nations, responsible for setting global Standards and Recommended Practices (SARPs) for safety, security, efficiency, and environmental protection in civil aviation.

Statement (II): ICAO Council has 36 members elected for three-year terms ✓

- The ICAO Council is the executive body of ICAO.
- It consists of 36 member states, elected by the ICAO Assembly (193 member states) for three-year terms, and oversees policy and technical matters between Assembly sessions.

22) Answer (d) I only

Explanation

Statement (I): SAGAR's five pillars include connectivity and infrastructure ✓

- SAGAR (Security and Growth for All in the Region) includes five pillars: Security cooperation, economic/trade integration, capacity building & disaster management, sustainable development, and connectivity & infrastructure.

Statement (II): MAHASAGAR is limited to disaster management ✗

- MAHASAGAR is a broader doctrine encompassing security, economic integration, infrastructure, and geopolitical objectives, not merely disaster response.

Statement (III): India's assistance is purely humanitarian ✗

- Assistance under MAHASAGAR blends humanitarian outreach with strategic maritime objectives, reflecting India's geopolitical and economic engagement in the Indian Ocean Region.

23) Answer (a) II, III and IV only

Explanation

Statement (I): LVM3 places satellites in SSO ✗

- LVM3 (~640 tonnes) is primarily designed for GTO/LEO missions, not Sun-Synchronous Orbit (SSO) as stated.

Statement (II): NSIL is ISRO's commercial arm since 2019 ✓

- NewSpace India Limited (NSIL) was established in 2019 as ISRO's commercial arm to facilitate commercial launch services and satellite missions.

Statement (III): BlueBird Block-2 enables direct-to-mobile 4G/5G connectivity ✓

- BlueBird Block-2 satellites are part of a LEO constellation enabling direct-to-mobile broadband connectivity.

Statement (IV): LVM3-M6 was the sixth operational flight from Sriharikota ✓

- LVM3-M6 denotes the sixth operational mission of LVM3, launched from Sriharikota, showcasing India's commercial launch capability.

24) Answer (c) II, III and IV only

Explanation

Statement (I): Thanjavur painting originated outside Tamil Nadu ✗

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- Thanjavur painting originated in Tamil Nadu and flourished under **Chola, Nayak, and Maratha rulers**, making the statement incorrect.

Statement (II): Thanjavur painting has a GI tag ✓

- It is protected under the **Geographical Indications (GI) Act**, safeguarding regional identity and artisans.

Statement (III): Uses gold foil, glass beads, and semi-precious stones ✓

- Hallmark features include **vivid colours, gold embellishments**, and **ornamental materials**.

Statement (IV): 'Palagai Padam' refers to paintings on wooden planks ✓

- Traditional Thanjavur paintings are executed on **wooden boards**, known as **Palagai Padam**.

25) Answer (b) Only two

Explanation

Pair (1): Vitthala Temple – Chola architecture ✗

- The Vitthala Temple at Hampi is a masterpiece of **Vijayanagara architecture**, not Chola.

Pair (2): Hampi – Tungabhadra basin, Karnataka ✓

- Hampi is located in the **Tungabhadra River basin** in **Karnataka**, the former capital of the **Vijayanagara Empire**.

Pair (3): Krishna Temple – Vijayanagara period ✓

- The Krishna Temple was built during the **Vijayanagara era**, reflecting its distinctive architectural style.

26) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

Explanation

Statement-I: Industrial parks are designed to increase **productivity and operational efficiency** by providing shared infrastructure, streamlined processes, and a facilitative regulatory environment. ✓

- Industrial parks reduce **costs, time, and transaction frictions** for firms.
- Shared facilities (power, water, logistics, labs, security) and **single-window clearances** enhance efficiency.

Statement-II: These features enable industries to operate more efficiently and productively. ✓

- The very **design features**—shared infrastructure, predictable regulations, and faster approvals—**directly explain** the productivity gains cited in Statement-I.
- Hence, Statement-II **logically explains** Statement-I.

27) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

Explanation

Statement-I: Patent applications in India have crossed **1,10,000**, reflecting robust growth in IPR filings. ✓

- Recent data show a **record surge** in patent filings, indicating a strengthening innovation ecosystem.

Statement-II: The surge is primarily driven by **Indian residents**, signalling a move towards **self-reliance in R&D**. ✓

- With **over ~61.9%** filings by residents, domestic innovation **explains the overall growth** noted in Statement-I.
- Thus, Statement-II **explains** Statement-I.

28) Answer (c) Statement-I is correct, but Statement-II is incorrect

Explanation

Statement-I: The creator economy has contributed significantly to **GDP and employment** in India. ✓

- Industry reports show large contributions (e.g., **YouTube's GDP impact**, expanding creator livelihoods).

Statement-II: Brand spending on creators is expected to decline. ✗

- Evidence indicates **rising brand allocations** to digital creators as platforms, reach, and ROI expand.
- Hence, Statement-II is **incorrect**.

29) Answer (c) Statement-I is correct, but Statement-II is incorrect

Explanation

Statement-I: Open Market Operations (OMOs) are a primary RBI tool to manage liquidity via buying/selling government securities. ✓

- OMOs are central to **systemic liquidity management**.

Statement-II: OMOs involve only purchases of securities. ✗

- OMOs include **both purchases and sales**, depending on liquidity conditions.
- Therefore, Statement-II is **incorrect**.

30) Answer (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

Explanation

Statement-I: Swami Shraddhanand Saraswati was **assassinated in Delhi in 1926**. ✓

- A well-documented historical fact.

Statement-II: He was a prominent leader of the **Shuddhi movement**. ✓

- This describes his **role in social reform**, but it **does not explain** the assassination event stated in Statement-I.

31) Answer (c) I and III only

Explanation

Statement (I): Sahkar Shakti-Sakha/Sakhi Model is advocated under a mission-mode approach ✓

- The **Sahkar Shakti-Sakha/Sakhi Model** is proposed as a **mission-mode reform** to strengthen cooperatives for **marginal farmers**, with focused institutional backing and time-bound outcomes.

Statement (II): Most cooperatives do not face gender gaps ✗

- In reality, **most cooperatives are male-dominated**, and **significant gender gaps persist** in membership, leadership, and access—precisely why **gender-sensitive reforms** are recommended.

Statement (III): Digital Public Infrastructure and Cooperative Stack are recommended ✓

- Recommendations emphasize **Digital Public Infrastructure (DPI)** and a **Cooperative Stack** to enhance outreach, transparency, credit access, and service delivery for marginal farmers.

32) Answer (a) II and III only

Explanation

Statement (I): SIAs/EIAs are always conducted by independent agencies ✗

- In practice, **SIAs and EIAs often lack independence and rigor**, undermining procedural safeguards under the **RFCTLARR Act, 2013**.

Statement (II): Arbitrary reclassification of land reduces compensation ✓

- Manipulation in land classification** to lower compensation has been reported, violating **fairness and transparency** principles.

Statement (III): Loss of customary forest rights should be treated as economic displacement ✓

- Committees have emphasized that **loss of customary forest rights** constitutes **economic displacement**, necessitating **full rehabilitation**.

Statement (IV): NMC has been fully effective across projects ✗

- The **National Monitoring Committee (NMC)** has **not been uniformly effective**, especially in large and complex projects.

33) Answer (c) Only three

Explanation

Pair (1): Singaravelu Chettiar — First President of CPI ✓

- A pioneering **labour leader and freedom fighter**, he served as the **first President** of the CPI.

Pair (2): S.V. Ghate — Early General Secretary of CPI ✓

- He was among the **first General Secretaries**, playing a key organizational role.

Pair (3): Abani Mukherjee — Founder in Tashkent (1920) ✓

- He was among the **seven revolutionaries** who founded the CPI **in exile at Tashkent**.

34) Answer (a) Ministry of Skill Development and Entrepreneurship**Explanation****Option (a): Ministry of Skill Development and Entrepreneurship ✓**

- PM-SETU** is implemented by this Ministry to **upgrade ITIs**, align curricula with industry needs, and enhance employability.

Option (b): Ministry of Labour and Employment ✗

- Not the implementing authority for PM-SETU.

Option (c): Ministry of Heavy Industries ✗

- Unrelated to ITI upgradation under PM-SETU.

Option (d): Ministry of Education ✗

- Focuses on formal education, not vocational ITI transformation under this scheme.

35) Answer (a) A nuclear-capable intermediate-range submarine-launched ballistic missile**Explanation****Option (a): Nuclear-capable intermediate-range SLBM developed by DRDO ✓**

- K-4** is an **SLBM** (~3,500 km range), **nuclear-capable**, deployed on **Arihant-class SSBNs**, completing the **sea-based leg of India's nuclear triad** and ensuring **credible second-strike capability**.

Option (b): Air-to-air missile ✗

- Incorrect classification.

Option (c): Anti-ship missile for surface vessels ✗

- K-4 is **not** an anti-ship system.

Option (d): Cruise missile ✗

- K-4 is a **ballistic**, not cruise, missile.

36) Answer (b) A tripartite initiative to prevent the trade in conflict diamonds**Explanation****Option (a): Environmental regulation framework for mining industries ✗**

- The **Kimberley Process (KP)** is **not** an environmental or mining regulation mechanism.

Option (b): Tripartite initiative to prevent conflict diamonds ✓

- The **Kimberley Process (2003)** is a **tripartite partnership** involving:
 - **Governments**
 - **Diamond industry**
 - **Civil society**
- Its objective is to **prevent "conflict diamonds"** (used to finance armed conflicts) from entering the **legitimate diamond trade**.
- Covers **~99% of global rough diamond trade**, with **60 participants (including the EU)**.

Option (c): Certification for gold and precious metals ✗

- Gold certification falls under **other frameworks**, not KP.

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Option (d): Bilateral agreement between India and South Africa ✗

- KP is a **multilateral global framework**, not bilateral.

37) Answer (d) Maharashtra

Explanation

Option (a): Gujarat ✗

- No such archaeological discovery reported.

Option (b): Karnataka ✗

- Incorrect location.

Option (c): Rajasthan ✗

- Not associated with the discovery.

Option (d): Maharashtra ✓

- India's largest circular labyrinth was discovered at **Boramani grassland, Solapur district, Maharashtra**.
- Dated to the **Satavahana period (1st-3rd century CE)**.
- Features **15 concentric stone circuits**, the highest in India.
- Linked to **Indo-Roman trade networks** and possible **ritual/symbolic use**.

38) Answer (d) It is a non-profit organization registered under the Societies Registration Act, 1860

Explanation

Option (a): Established solely by Indian industry ✗

- QCI was established jointly by Government of India and industry.

Option (b): Chairman appointed by the President ✗

- Chairman is appointed by the Prime Minister on industry recommendation.

Option (c): Nodal ministry is Ministry of Consumer Affairs ✗

- Nodal ministry is DPIIT, Ministry of Commerce and Industry.

Option (d): Non-profit under Societies Registration Act, 1860 ✓

- **Quality Council of India (QCI)** is a **non-profit autonomous body**, registered under the **Societies Registration Act, 1860**.
- Plays a key role in **quality certification, accreditation, and standardization**.

39) Answer (b) Austro-Asiatic (Munda)

Explanation

Option (a): Tibeto-Burman ✗

- Predominant in **Northeast India**.

Option (b): Austro-Asiatic (Munda) ✓

- **Santhali** belongs to the **Munda branch of the Austro-Asiatic family**.
- Spoken mainly in **Jharkhand, Odisha, West Bengal, Bihar**.
- Written in the **Ol Chiki script**.
- Added to the **Eighth Schedule** by the **92nd Constitutional Amendment Act, 2003**.

Option (c): Indo-Aryan ✗

- Includes Hindi, Bengali, Marathi, etc.

Option (d): Dravidian ✗

- Includes Tamil, Telugu, Kannada, Malayalam.

40) Answer (a) Nigeria, Chad, Cameroon, and Niger

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Explanation

Option (a): Nigeria, Chad, Cameroon, and Niger ✓

- Lake Chad is located at the **conjunction of four countries**:
 - Nigeria
 - Chad
 - Cameroon
 - Niger
- It is a **freshwater lake** vital for **fisheries, agriculture, and livelihoods** of millions.
- Managed regionally through the **Lake Chad Basin Commission**.

Option (b): Nigeria, Mali, Burkina Faso, Benin ✗

- Mali, Burkina Faso, Benin do **not** border Lake Chad.

Option (c): Nigeria, Ghana, Togo, Benin ✗

- Incorrect regional grouping.

Option (d): Nigeria, Equatorial Guinea, Cameroon, CAR ✗

- Equatorial Guinea and CAR are **not adjacent** to Lake Chad.

41) Answer (a) I only

Explanation

Statement (I): PMGSY was launched in December 2000 to provide rural road connectivity ✓

- Pradhan Mantri Gram Sadak Yojana (PMGSY) is a **centrally sponsored scheme** launched in **December 2000** to ensure **all-weather road connectivity** to unconnected rural habitations, directly supporting **rural development and poverty alleviation**.

Statement (II): Population threshold for plains is more than 1000 under PMGSY-IV ✗

- Under **PMGSY-IV**, the population threshold for plain areas is **500+**, not more than **1000**.
- Hence, this statement is **incorrect**.

42) Answer (a) I and II only

Explanation

Statement (I): IOC was established in 1960 to promote marine science cooperation ✓

- The **Intergovernmental Oceanographic Commission (IOC)** of **UNESCO** was established in **1960** to promote **international cooperation in marine science**.

Statement (II): IOC coordinates the UN Decade of Ocean Science (2021-2030) ✓

- IOC is the **coordinating body** for the **UN Decade of Ocean Science for Sustainable Development (2021-2030)**.

Statement (III): IOC Secretariat is located in Geneva ✗

- The IOC Secretariat is located in **Paris, France**, not Geneva.

43) Answer (c) I, II and III only

Explanation

Statement (I): BIS sets nitrate limit at 45 mg/l ✓

- The **Bureau of Indian Standards (BIS)** prescribes **45 mg/l** as the permissible nitrate limit in drinking water.

Statement (II): Fertilizer overuse is a major cause of nitrate contamination ✓

- **Excessive nitrogen-based fertilizers** are a primary source of groundwater nitrate pollution.

Statement (III): High nitrate levels cause methemoglobinemia ✓

- Elevated nitrate levels can cause **methemoglobinemia (blue baby syndrome)**, especially in infants.

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Statement (IV): Nitrate contamination cannot cause eutrophication **X**

- Nitrates **do cause eutrophication**, leading to **algal blooms and ecological imbalance**.
- Hence, this statement is **incorrect**.

44) Answer (a) I, II and III only

Explanation

Statement (I): UDGAM portal helps trace unclaimed bank deposits **✓**

- UDGAM enables citizens to trace **unclaimed bank deposits**.

Statement (II): MITRA portal helps trace unclaimed mutual fund assets **✓**

- MITRA is dedicated to **unclaimed mutual fund investments**.

Statement (III): Bima Bharosa portal helps trace unclaimed insurance amounts **✓**

- Bima Bharosa facilitates tracing of **unclaimed insurance funds**.

Statement (IV): Dedicated national portal exists for unclaimed pension funds **X**

- No dedicated national digital portal currently exists for **unclaimed pension balances**.

45) Answer (c) I, II and III only

Explanation

Statement (I): Amendment aims to enhance ease of doing business **✓**

- The **Colliery Control (Amendment) Rules, 2025** seek to improve **ease of doing business** in the coal sector.

Statement (II): Prior CCO permission for coal companies is abolished **✓**

- Coal companies no longer require prior approval from the **Coal Control Organisation (CCO)** to open mines.

Statement (III): Company boards approve mine openings **✓**

- Approval authority is now vested with the **board of the concerned coal company**.

Statement (IV): Approval for non-company entities no longer rests with CCO **X**

- For **non-company entities**, approval **continues to rest with the CCO**, making this statement **incorrect**.

46) Answer (d) I, II and III

Explanation

Statement (I): Chenab receives Jhelum in Pakistan and later joins Sutlej **✓**

- The **Chenab River** flows into **Pakistan**, where it is joined by the **Jhelum River**.
- Subsequently, Chenab merges with other tributaries and finally contributes to the **Indus river system**, making this statement **correct**.

Statement (II): Chenab originates from the confluence of Chandra and Bhaga **✓**

- The Chenab is formed at **Tandi in Himachal Pradesh** by the confluence of the **Chandra and Bhaga rivers**.
- This is a **standard geographical fact**.

Statement (III): Chenab flows west between the Siwalik Range and Lesser Himalayas in J&K **✓**

- In **Jammu & Kashmir**, the river flows through rugged terrain influenced by the **Lesser Himalayas**, with the broader Himalayan system shaping its course.
- The statement is **broadly correct in UPSC geography context**.

47) Answer (d) I and III only

Explanation

Statement (I): Ratanmahal Wildlife Sanctuary is located in Dahod district along the Gujarat-MP border **✓**

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- Ratanmahal Wildlife Sanctuary lies in **Dahod** district of Gujarat, adjacent to **Madhya Pradesh**, making this statement **correct**.

Statement (II): Sanctuary fauna includes multiple large species (as implied) ✗

- While the sanctuary hosts diverse fauna, the **statement as framed is not directly substantiated** in the given context and overgeneralizes species presence.
- Hence, it is **incorrect**.

Statement (III): Ratanmahal houses the highest sloth bear population in Gujarat ✓

- Ratanmahal is widely regarded as a **stronghold of sloth bears** in Gujarat, making this statement **correct**.

48) Answer (a) Only one**Explanation****Pair (1): ITEWC – Mumbai ✗**

- The Indian Tsunami Early Warning Centre (ITEWC) is located in **Hyderabad**, not Mumbai.

Pair (2): TRRP recognition renewable every two years ✗

- UNESCO-IOC Tsunami Ready Recognition Programme certification is **renewable every four years**, not two.

Pair (3): NDMA guidelines recommend holistic tsunami risk management ✓

- NDMA tsunami guidelines emphasize **awareness, capacity building, education, training, research, and technology**, not just technological upgradation.

→ Only one pair is correctly matched.

49) Answer (d) None**Explanation****Pair (1): Somalia – Ethiopia (North) ✗**

- Somalia borders **Ethiopia to the west**, not the north.

Pair (2): Puntland – Kenya ✗

- Puntland does **not** share a border with Kenya; it lies in **northeastern Somalia**.

Pair (3): Somaliland – Djibouti (directional mismatch) ✗

- While Somaliland borders **Djibouti**, the **directional description is incorrect**, making the pair invalid.

→ No pair is correctly matched.

50) Answer (d) All four**Explanation****Pair (1): Permethrin – banned insecticide ✓**

- Permethrin is explicitly prohibited under **IS 19412:2025**.

Pair (2): Benzyl cyanide – prohibited fragrance intermediate ✓

- Identified as a **banned synthetic fragrance intermediate** due to health risks.

Pair (3): Diphenylamine – prohibited substance ✓

- Listed among **disallowed chemicals** in incense sticks.

Pair (4): Alethrin – banned insecticidal chemical ✓

- Alethrin is explicitly banned because of **toxicity concerns**.