

Solutions

DATE : (25th Aug- 31st Aug)

1) Answer: (d) – Chief Justice of India with 4 senior-most judges

Explanation:

- **Definition:** Extra-constitutional system evolved through **Supreme Court judgments** to ensure judicial independence.
- **Origin:**
 - **Second Judges Case (1993)** → Judiciary given primacy in appointments.
 - **Third Judges Case (1998)** → Collegium composition clarified.
- **Composition:**
 - **SC Appointments** → CJI + 4 senior-most judges.
 - **HC Appointments** → CJI + 2 senior-most judges.
- **Significance:** Safeguards **separation of powers**, though criticized for **opacity**.

2) Answer: (b) – Provides information on criminal modus operandi, objects, devices, and concealment methods

Explanation:

- **Interpol Notices:** 8 color-coded types (Red, Yellow, Green, Blue, Black, Orange, Purple, Special).
- **Purple Notice:**
 - Shares **modus operandi** and **concealment techniques** of criminals.
 - Helps law enforcement adapt to **emerging threats** (e.g., drug smuggling).
- **Relevance:** Strengthens **international intelligence-sharing**.

3) Answer: (d) – Invasive, offers little sustenance to native fauna, causes ecological imbalance

Explanation:

- **Background:** Exotic species introduced for **urban greenery**.
- **Concerns:**
 - **Invasive** – displaces native species.
 - **Ecological impact** – termed “**green desert**” as it doesn’t support birds/insects.
 - **State Actions:** Banned in **Gujarat, Tamil Nadu**.
- **Significance:** Reflects shift towards **biodiversity-sensitive urban planning**.

4) Answer: (c) – Prime Minister of India

Explanation:

- **Legal Basis:** **Disaster Management Act, 2005**.
- **Structure:** Apex disaster management body in India.
- **Head:** **Prime Minister** (not Home Minister/Cabinet Secretary).
- **Functions:**
 - Lays down **policies, guidelines, plans**.
 - Coordinates **state & central efforts**.
- **Vision:** Build a **disaster-resilient India**.

5) Answer: (c) – Both I and II correct

Explanation:

- **Purple Notice:** Shares **methods & criminal techniques**.
- **UNSC Special Notice:** Targets individuals/entities under **UN sanctions** (terrorists, sanctioned groups).
- **Importance:**
 - Strengthens **global cooperation**.
 - Supports **counter-terrorism & sanctions enforcement**.

6) Answer: (a) – I only

Explanation:

- **Framework:**
 - Developed **jointly** by the **Bureau of Energy Efficiency (BEE)** and **Alliance for an Energy Efficient Economy (AEEE)**.
 - Covers **36 States/UTs**.
- **Classification of States:**
 - **Front Runners, Achievers, Contenders, Aspirants.** ✓ (Statement I correct)
- **Error in Statement II:**
 - Index is **not solely developed by BEE**, but in collaboration with AEEE.
- **Significance:**
 - Encourages **competition & benchmarking** among states.
 - Supports **climate goals & energy transition**.

7) Answer: (c) – Both I and II

Explanation:

- **Establishment:** Launched in **2008** by the **Indian Navy**.
- **Nature:** **Voluntary initiative** among Indian Ocean littoral states.
- **Chairmanship:** Rotates **every two years.** ✓ (Statement I correct)
- **Indian Navy Role:** Initiated as a platform for **maritime security & cooperation.** ✓ (Statement II correct)
- **Relevance:**
 - Tackles **piracy, maritime terrorism, disaster response**.
 - Strengthens **regional security architecture**.

8) Answer: (c) – All Statements Correct

Explanation:

- **UNTOC (Palermo Convention):**
 - **Adopted 2000, in force 2003.**
 - **Only global legally binding instrument** against organized crime. ✓ (Statement I correct)
 - Known as **Palermo Convention.** ✓ (Statement II correct)
 - Supported by 3 Protocols → **Human trafficking, migrant smuggling, illicit firearms.**
- **UNCAC:**
 - **Adopted 2000, in force 2003.** ✓ (Statement III correct)
 - Focus → **Prevention, criminalization, cooperation, asset recovery.**
- **Importance:**
 - Strengthens **cross-border law enforcement**.
 - Facilitates **extradition & anti-corruption measures**.

9) Answer: (c) – Both I and II

Explanation:

- **Legal Basis:** Established under **Disaster Management Act, 2005.** ✓ (Statement I correct)
- **Status:** **Apex body** for disaster management in India. ✓ (Statement II correct)
- **Head:** Prime Minister of India.
- **Functions:**
 - Formulates **policy, plans, guidelines**.
 - Coordinates **national & state disaster response**.
- **Relevance:** Key for **preparedness & resilience** in an era of **frequent disasters**.

10) Answer: (c) – Located on the Ravi River near Pathankot, Punjab–J&K border

Explanation:

- **Location:** On the **Ravi River**, near **Pathankot** (Punjab–J&K border).
- **Purpose:** Multipurpose → **Irrigation & Hydroelectric Power**.
- **Regional Role:**
 - Supports **agriculture** in Punjab & adjoining areas.
 - Contributes to **energy security** through hydro power.
- **Significance:** Part of India's **river valley projects** aiding **resource management**.

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11) Answer: (b) – Educate Girls NGO

Explanation:

- **Background:** Established in **1957**, named after **Philippine President Ramon Magsaysay**.
- **Nature:** Called the “**Asian Nobel Prize**”; honors **integrity, service, and leadership**.
- **2025 Milestone:** **Educate Girls NGO** → First **Indian organization** to win the award.
- **Significance:**
 - Recognizes work in **girls’ education & empowerment**.
 - Positions **India’s civil society leadership** at global level.

12) Answer: (c) – Raising the FDI cap to 100% via the automatic route

Explanation:

- **Issued By:** **Ministry of Finance** under **Insurance Act, 1938**.
- **Proposal:** Increase **FDI cap** in insurance from **74% → 100%**, through the **automatic route**.
- **Oversight:** Subject to **IRDAI regulations**.
- **Impact:**
 - Attracts **global capital**.
 - Boosts **competition & insurance penetration**.
 - Aligns with **financial sector liberalization**.

13) Answer: (a) – A flagship initiative providing citizens with legally recognized digital documents and secure real-time verification

Explanation:

- **Launched By:** **Ministry of Electronics & IT (MeitY)** under **Digital India Mission**.
- **Developed By:** **National e-Governance Division (NeGD)**.
- **Features:**
 - Provides **secure digital storage** for documents.
 - Enables **legally valid, real-time verification**.
 - Integrated with **2000+ government services**.
- **Relevance:**
 - Reduces **paperwork**.
 - Enhances **efficiency & transparency** in governance.

14) Answer: (c) – Floating sea slugs capable of causing painful stings to humans

Explanation:

- **Nature:** Small (**≈4 cm**) **sea slugs**, not fish/reptiles/jellyfish.
- **Habitat:** Found in **Pacific, Atlantic, Indian Oceans**.
- **Key Feature:** Float on surface → **painful sting** (not fatal).
- **Recent Context:** Beach closures in **Spain (2025)** due to sightings.
- **Significance:** Raises awareness of **marine hazards & public safety**.

15) Answer: (d) – Use of social engineering to trick individuals into installing malicious Android Package Kit files

Explanation:

- **Mechanism:**
 - Fraudsters use **social engineering** (impersonation, fake messages).
 - Users download **malicious APK files**.
 - Leads to **unauthorized access & financial fraud**.
- **Policy Context:**
 - Rising with **digital payments & smartphone penetration**.
 - Requires **cybersecurity literacy & awareness**.
- **Significance:**
 - Example of **evolving cybercrime**.
 - Stresses need for **stronger digital ecosystem security**.

16) Answer: (a) – I only

Explanation:

- **Policy Background:** Part of **Foreign Trade Policy**; aims at **export promotion**.
- **Mechanism:** Allows **duty-free import** of raw materials for export production.
- **Special Feature:** Exemption from **Quality Control Order (QCO)** compliance for inputs.
- **Eligibility:** Both **manufacturer exporters** and **merchant exporters (with supporting manufacturers)**.
- **Statement Analysis:**
 - **Statement I:** Correct – Duty-free import without QCO compliance.
 - **Statement II:** Incorrect – Not limited to only manufacturer exporters.

17) Answer: (a) – I only

Explanation:

- **Issued By:** **Ministry of Finance**, under **Insurance Act, 1938**.
- **Proposal:** Raise **FDI cap in insurance** from **74% → 100%**, via **automatic route**.
- **Oversight:** Subject to **IRDAI regulation + parliamentary approval**.
- **Statement Analysis:**
 - **Statement I:** Correct – Automatic route with IRDAI oversight & Parliament's nod.
 - **Statement II:** Incorrect – Ministry of Finance (not Commerce & Industry) issues the draft rules.

18) Answer: (a) – I only

Explanation:

- **Nature:** Tiny (~4 cm) **floating sea slugs**, bright blue in color.
- **Habitat:** Tropical/subtropical **ocean surfaces** (Pacific, Atlantic, Indian Oceans).
- **Risk:** **Painful sting**, but **not fatal**.
- **Contemporary Context:** Caused **beach closures in Spain**.
- **Statement Analysis:**
 - **Statement I:** Correct – Marine floating sea slugs.
 - **Statement II:** Incorrect – Sting is painful but non-lethal.

19) Answer: (a) – I only

Explanation:

- **History:** Introduced in **1569** by **Gerardus Mercator**.
- **Utility:** Designed for **navigation** → preserves **rhumb lines** as straight.
- **Property:** **Conformal** → preserves **shapes & angles locally**.
- **Distortion:** Inflates polar areas (e.g., Greenland looks large vs. Africa).
- **Statement Analysis:**
 - **Statement I:** Correct – Mercator is conformal.
 - **Statement II:** Incorrect – Africa is ≈14 times Greenland, but appears similar, not smaller.

20) Answer: (c) – I and II only

Explanation:

- **Policy Context:** Initiative by **Ministry of Road Transport & Highways** to modernize tolling.
- **Features:**
 - Uses **FASTag & Vehicle Registration Number (VRN)**.
 - Enables **barrier-less, automatic tolling**.
- **Benefits:**
 - Reduces **congestion, travel time, emissions**.
 - Improves **revenue collection & transparency**.
- **Statement Analysis:**
 - **Statement I:** Correct – Uses FASTag + VRN.
 - **Statement II:** Correct – Reduces congestion & improves efficiency.

21) Answer: (c) – Construction

Explanation:

- **Compiled By: Central Statistical Organisation (CSO).**
- **Coverage: Mining, Manufacturing, Electricity** (assigned weights).
- **Exclusion: Construction sector** excluded due to data constraints.
- **Significance:**
 - Monthly indicator of **industrial growth**.
 - Helps in **policy formulation, planning, and economic monitoring**.
- **Statement Analysis:**
 - Mining, Manufacturing, Electricity → Included.
 - **Construction → Excluded (Correct Option).**

22) **Answer:** (a) – Next-generation air-launched, precision-guided missiles

Explanation:

- **Nature:** Advanced **air-launched precision weapons**.
- **Specifications:** Range **240–450 km, 500-pound warhead**, advanced guidance systems.
- **Role:** Enhance **strike capability & deterrence** of air forces.
- **Current Relevance:** International transfers highlight their role in **modern conflicts**.
- **Option Analysis:**
 - (a) Correct – Matches description.
 - Others – Not submarine-launched, not surface-to-air, not underwater vehicles.

23) **Answer:** (a) – Food grain or rice

Explanation:

- **Region:** Predominantly in **Western Odisha**, also parts of Chhattisgarh.
- **Nature:** Agro-festival celebrating **new harvest (rice/food grain)**.
- **Rituals:** **Worship of grain**, community feasts, agrarian thanksgiving.
- **Significance:** Strengthens **cultural identity, social unity, respect for agriculture**.
- **Option Analysis:**
 - (a) Correct – Grain/rice worship central.
 - (b), (c), (d) – River, trees, cattle not central to festival.

24) **Answer:** (c) – National Mission on Financial Inclusion aiming to provide universal banking access

Explanation:

- **Launched: 2014**, flagship **financial inclusion mission**.
- **Features:**
 - **No-frills bank accounts**, RuPay card, overdraft facility.
 - **Insurance cover**, focus on **women & rural households**.
- **Impact:**
 - Over **56 crore accounts**, majority rural/semi-urban.
 - Supports **DBT, digital payments, women's empowerment**.
- **Option Analysis:**
 - (c) Correct – Universal financial access.
 - Others – Not digital literacy, not income support, not health insurance.

25) **Answer:** (a) – To facilitate open, transparent and inclusive discussions on AI governance

Explanation:

- **Framework:** Emerged from **Pact for the Future & Global Digital Compact**.
- **Nature:** **Non-military, multi-stakeholder platform**.
- **Role:**
 - Encourages **dialogue, best practice sharing, policy coordination**.
 - Promotes **ethical, safe, inclusive AI**.
- **Global Relevance:** Guides countries on **AI regulation & governance**.
- **Option Analysis:**
 - (a) Correct – Primary function.
 - (b), (c), (d) – Not military, not about patents, not trade regulation.

26) **Answer:** (b) – II only

Explanation:

- **Developer:** Created by **Energy Policy Institute at the University of Chicago (EPIC)**, not WHO.
- **Nature:** Measures **impact of PM2.5 pollution on life expectancy**.
- **Mechanism:** Converts air pollution exposure into **years of life lost/gained** using epidemiological data.
- **Relevance:**
 - Reports show **India & South Asia** worst affected.
 - Delhi residents lose **~10 years of life expectancy** due to pollution.
- **Statement Analysis:**
 - (I) Incorrect – Developed by EPIC, not WHO.
 - (II) Correct – Measures life expectancy loss due to PM2.5.

27) Answer: (d) – I and II only

Explanation:

- **Compiled By:** **Central Statistical Organisation (CSO)**.
- **Coverage:** **Mining, Manufacturing, Electricity**.
- **Exclusion:** Construction, gas, water supply excluded.
- **Weights:** **Manufacturing has the highest weight**.
- **Statement Analysis:**
 - (I) Correct – Manufacturing highest weight.
 - (II) Correct – Compiled by CSO.
 - (III) Incorrect – Construction excluded.

28) Answer: (c) – I and IV only

Explanation:

- **Definition:** Natural gas cooled to **-162°C** → becomes liquid.
- **Volume:** Occupies **1/600th** of gaseous volume (easier transport).
- **Process:** Conversion called **liquefaction**, not gasification.
- **Global Trade:** **USA = largest exporter**.
- **Statement Analysis:**
 - (I) Correct – LNG is gas cooled to -162°C.
 - (II) Incorrect – Volume reduces, not increases.
 - (III) Incorrect – Process is liquefaction, not gasification.
 - (IV) Correct – USA top exporter.

29) Answer: (a) – I, II and IV only

Explanation:

- **Region:** Celebrated in **Western Odisha**, also parts of Chhattisgarh.
- **Meaning:** “Nua” (new) + “Khai” (food grain).
- **Historical Roots:** Linked to **Raja Ramai Dev’s era (14th century CE)**.
- **Significance:** Worship of **new rice**, community feast, agrarian thanksgiving.
- **Statement Analysis:**
 - (I) Correct – Worship of rice/food grain.
 - (II) Correct – Origin linked to Raja Ramai Dev.
 - (III) Incorrect – Not linked to winter solstice.
 - (IV) Correct – Agro-based religious festival.

30) Answer: (d) – II and III only

Explanation:

- **Climate Impact:**
 - Rising **global temperatures** → higher rainfall intensity + longer dry spells.
 - Weakening correlation between **El Niño & monsoon** due to altered global circulation.
- **Risks:** Increased **floods, landslides, flash floods**.
- **Policy Needs:** **Forecasting improvements, pre-disaster planning, resilient infrastructure**.
- **Statement Analysis:**

- (I) ✗ Incorrect – Humid regions often getting **drier**, not wetter.
- (II) ✓ Correct – Rising temperatures alter rainfall intensity & dry spells.
- (III) ✓ Correct – El Niño link weaker due to global changes.

31) **Answer:** (d) – Ministry of Housing and Urban Affairs

Explanation:

- **Launched:** 2020, as a **Central Sector Scheme**.
- **Nodal Ministry:** **Ministry of Housing and Urban Affairs (MoHUA)**.
- **Features:**
 - **Working capital loans** in 3 tranches.
 - **Digital incentives** via UPI-linked RuPay cards.
 - Capacity building & financial inclusion measures.
- **Recent Update:** Extended till **March 2030**, covering **1+ crore vendors**.
- **Incorrect Options:** Commerce, Labour, Finance Ministries not implementing agencies.

32) **Answer:** (b) – Bacterium *Burkholderia mallei*

Explanation:

- **Nature:** Highly infectious **zoonotic disease** in equines (horses, mules, donkeys).
- **Causative Agent:** *Burkholderia mallei* (bacterium).
- **Control Measures:**
 - Managed under **PCICDA Act, 2009**.
 - No vaccine; controlled via **surveillance, notification, biosecurity**.
- **Public Health Risk:** Transmissible to humans; potentially fatal.
- **Incorrect Options:** Not fungal, protozoal, or viral in origin.

33) **Answer:** (c) – Use of renewable biological resources to produce food, energy, and industrial goods

Explanation:

- **Concept:** Leverages **biological resources** (biomass, microorganisms, crops) for **sustainable production**.
- **Policy Base:** Anchored in **BioE3 Policy**; led by **Department of Biotechnology**.
- **Sectors:** Bio-based chemicals, energy, therapeutics, climate-resilient agriculture.
- **Significance:**
 - Grew from **\$10 bn → \$165.7 bn** in a decade.
 - Contributes **4%+ to GDP**.
- **Incorrect Options:** AI, chemical resources, carbon management are by-products but not defining features.

34) **Answer:** (c) – Bilateral exercise between the US and Egypt after the Camp David Accord

Explanation:

- **Origin:** Started **1980**, post **Camp David Accord (1977)**.
- **Nature:** Initially **bilateral (US–Egypt)**; since 1995, expanded to **multilateral tri-service** exercise.
- **Location:** Conducted in **Egypt**.
- **Relevance:** Enhances **military cooperation, interoperability, trust-building**.
- **Incorrect Options:** Not naval-only, not trilateral with India, not a UN peacekeeping mission.

35) **Answer:** (a) – An economic theory that compares currencies through a “basket of goods” approach

Explanation:

- **Concept:** Uses a **basket of goods** to compare currency values by adjusting for **price levels**.
- **Purpose:** Neutralizes **exchange rate distortions** in global comparisons.
- **Applications:** GDP comparison, global rankings, policy analysis.
- **India’s Position:** **3rd-largest economy by PPP**, projected to become **2nd-largest**.
- **Incorrect Options:** Not a hedging instrument, trade agreement, or exchange-rate regulator.

36) **Answer:** (c) – Both I and II

Explanation:

- **Establishment:** 1957, as part of the **UN system**.
- **Headquarters:** **Vienna, Austria**.
- **Mandate:** Promote **safe, secure, and peaceful use** of nuclear technology.
- **Achievements:**
 - Monitoring nuclear programs.
 - Supporting nuclear cooperation & safeguards.
 - **Nobel Peace Prize (2005)** for non-proliferation efforts.
- **Statement Analysis:**
 - (I) Correct – Nobel Peace Prize, 2005.
 - (II) Correct – HQ in Vienna.

37) **Answer:** (a) – II and III only

Explanation:

- **Causative Agent:** *Burkholderia mallei* (bacterium).
- **Hosts:** Mainly **horses, donkeys, mules** (equines).
- **Status:** **Notifiable disease** under **PCICDA Act, 2009**.
- **Control:** No vaccine → relies on **surveillance, movement control, biosecurity**.
- **Statement Analysis:**
 - (I) Incorrect – Affects equines, not cattle at large.
 - (II) Correct – Listed as notifiable disease.
 - (III) Correct – Zoonotic bacterial disease.

38) **Answer:** (a) – I only

Explanation:

- **Established:** 2019, post-Kargil Review Committee & Group of Ministers' recommendations.
- **Role:**
 - **Permanent Chairman of Chiefs of Staff Committee.**
 - **Principal military adviser** to Defence Minister on tri-service issues.
 - Oversees **theaterisation & jointness**.
- **Limitations:** Does not exercise direct operational command over all services.
- **Statement Analysis:**
 - (I) Correct – Permanent Chairman of Chiefs of Staff Committee.
 - (II) Incorrect – Individual services retain operational command.
 - (III) Incorrect – Advises on **all tri-service matters**, not just Army.

39) **Answer:** (a) – Both Statement I and II are correct, and Statement II explains Statement I

Explanation:

- **Mandate:** World's central **intergovernmental nuclear body**.
- **Structure:** General Conference + Board of Governors.
- **Functions:**
 - **Standards & inspections** for nuclear safety.
 - Support for **peaceful nuclear technology**.
 - Monitor compliance with **non-proliferation treaties**.
- **Recognition:** Nobel Peace Prize (2005).
- **Statement Analysis:**
 - (I) Correct – Global forum for nuclear cooperation.
 - (II) Correct – Focuses on peaceful & secure nuclear use.
 - (II explains I) → **Hence option (a)**.

40) **Answer:** (c) – Statement I correct, Statement II incorrect

Explanation:

- **Nature:** Third identified **interstellar object** after 1I/'Oumuamua (2017) & 2I/Borisov (2019).
- **Discovery:** By **ATLAS telescope (Chile)**.
- **Orbit:** **Hyperbolic trajectory** → not gravitationally bound to Sun → will not return.
- **Scientific Significance:** Provides insights into **planetary formation & interstellar medium**.

- **Statement Analysis:**

- (I) Correct – Hyperbolic orbit confirms interstellar origin.
- (II) Incorrect – Interstellar comets do **not** follow closed orbits.

41) Answer: (d) – To provide effective and expeditious disposal of cases related to environmental protection and conservation of natural resources

Explanation:

- **Established:** 2010, under **NGT Act, 2010**.
- **Mandate:** Disposal of environmental cases within **6 months**.
- **Scope:** Environmental protection, conservation of forests & natural resources.
- **Special Feature:** Guided by **principles of natural justice**; not bound by CPC.
- **Significance:** Strengthens **environmental governance & jurisprudence** in India.

42) Answer: (d) – Pumped Hydro Storage

Explanation:

- **Need:** Crucial for **renewable energy integration & grid stability**.
- **Types:** Mechanical, Electrochemical, Thermal, Electrical, Chemical.
- **Mechanical ESS Examples:** **Pumped Hydro Storage, Compressed Air Storage**.
- **Current Context:** India targets **500 GW non-fossil fuel capacity by 2030**.
- **Option Analysis:**
 - Hydrogen fuel cells → Chemical
 - Flow batteries → Electrochemical
 - Supercapacitors → Electrical
 - Pumped Hydro → Mechanical

43) Answer: (d) – A rare medicinal plant traditionally used by the Kani tribes of the Western Ghats

Explanation:

- **Origin:** Indigenous to **Western Ghats**; used by **Kani tribes**.
- **Property:** Known as “**the green that gives strength**”.
- **Application:** Used for anti-fatigue & therapeutic purposes; led to drug ‘**Jeevani**’.
- **Benefit Sharing:** Revenue sharing model with Kani tribe → milestone in **biodiversity conservation**.
- **Incorrect Options:** Not a rice variety, not an orchid, not a fish species.

44) Answer: (d) – To authorize and approve participation in carbon credits trading projects

Explanation:

- **Framework:** **Article 6.4, Paris Agreement** → enables carbon credit market.
- **DNA Role:**
 - National body authorizing projects for **emission reduction credits**.
 - In India → **21-member committee**, chaired by **Environment Ministry Secretary**.
- **Function:** Approves eligible projects ensuring **national & international compliance**.
- **Incorrect Options:**
 - Not fund allocation
 - Not price regulation
 - Not forest targets

45) Answer: (d) – Originates from the Kailash Kund glacier near Bhaderwah in Doda district and is a left bank tributary of the Chenab

Explanation:

- **Origin:** **Kailash Kund (Kali Kund) glacier**, Bhaderwah, Doda district (J&K).
- **Course:** Flows through **Jammu city** → lifeline of the region.
- **Tributary:** Left-bank tributary of **Chenab River** (part of Indus system).
- **Relevance:**
 - Vital for **Jammu’s water supply & agriculture**.
 - Falls under **Indus Waters Treaty** regime.

46) **Answer:** (b) – The largest and first antibody produced by the immune system when fighting off pathogens

Explanation:

- **Type:** First antibody produced during **primary immune response**.
- **Structure:** **Pentameric**, largest antibody.
- **Location:** Found in **blood & lymph**, not CSF alone.
- **Significance:**
 - Key for **early infection detection**.
 - Used in **diagnostics (serological tests)**.
- **Incorrect Options:** Not the smallest, not confined to digestion, not exclusive to post-vaccination.

47) **Answer:** (a) – CFR Gram Sabha through its CFR Management Committee

Explanation:

- **Legal Basis:** **Forest Rights Act (FRA), 2006**.
- **Authority:** **CFR Gram Sabha + its Management Committee** → sole authority to prepare CFRMPs.
- **Objective:** Empower **forest-dwelling Scheduled Tribes & OTFDs**.
- **Impact:**
 - **Decentralized forest governance**.
 - Promotes **equity, livelihood, and sustainability**.
- **Incorrect Options:** District Collector, Panchayat, or Forest Dept. not empowered to formulate CFRMPs.

48) **Answer:** (d) – They have high density, exceptional magnetic strength, and high energy density

Explanation:

- **Composition:** Alloys of **rare earth elements** (Neodymium, Samarium-Cobalt).
- **Properties:**
 - **High density**.
 - **Exceptional magnetic strength**.
 - **High energy product**.
- **Applications:** Electronics, wind turbines, EV motors, MRI machines.
- **Significance:** Rising demand in **clean energy & high-tech industries**.

49) **Answer:** (a) – Statements I and IV only

Explanation:

- **Statement I:** Correct – IgM is the **first antibody produced** in immune response.
- **Statement II:** Incorrect – IgM present in **blood & lymph**, not only in one.
- **Statement III:** Incorrect – IgM is **largest**, not smallest.
- **Statement IV:** Correct – Antibodies are **protective proteins** produced by immune system.
- **Overall Role:** Critical for **early defense** against infections.

50) **Answer:** (a) – I only

Explanation:

- **Species:** *Panthera uncia* (Snow Leopard).
- **Conservation Status:**
 - **IUCN Red List:** Vulnerable.
 - **CITES:** Appendix I.
 - **Wildlife (Protection) Act, 1972:** Schedule I.
- **Habitat:** High-altitude **Himalayan & Trans-Himalayan regions** (Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh). Not found in plains.
- **Cultural Significance:**
 - **State Animal** of **Ladakh** and **Himachal Pradesh**.
 - Flagship species for **Himalayan ecosystem conservation**.
- **Threats:** Habitat loss, climate change, poaching, livestock conflict, competition with common leopard.
- **Conservation Efforts:**
 - **Project Snow Leopard (2009)**.
 - Community-based conservation in Ladakh & Himachal.

- International initiative: **Global Snow Leopard & Ecosystem Protection Program (GSLEP)**.
- **Statement Analysis:**
 - (I) Correct – State animal of Ladakh & Himachal.
 - (II) Incorrect – Absent in plains; confined to **Himalayan zones**.

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