

Solutions

DATE : (10th Nov- 16th Nov)

1) Answer (a) Leading the Munda rebellion (Ulgulan) against colonial authorities

Explanation

Assessment of Statements

- **Birsa Munda led the Munda rebellion (Ulgulan)**
 - The **Ulgulan (Great Tumult)** of 1899–1900 was a major tribal uprising led by Birsa Munda in the Chhotanagpur region.
 - It aimed at resisting **colonial exploitation, land alienation, and feudal practices** imposed by *Dikus*(outsiders).
 - His leadership sought to restore **Khuntkatti land rights** and revive tribal autonomy.
- **Birsa Munda founded the Arya Samaj**
 - The **Arya Samaj** was founded by **Swami Dayanand Saraswati** in 1875 as a reformist Hindu movement promoting Vedic principles.
 - Birsa Munda was not associated with this movement.
- **Birsa Munda founded the Brahmo Samaj**
 - The **Brahmo Samaj** was established by **Raja Ram Mohan Roy** in 1828 to reform Hindu society, oppose social evils, and promote rationalism.
 - It has no connection with Birsa Munda.
- **The Kuka movement was led by Birsa Munda**
 - The **Kuka (Namdhari) Movement** originated in **Punjab**, led by Balak Singh and later Guru Ram Singh.
 - It was unrelated to the tribal resistance movement in Chhotanagpur.

Broader Significance

- Birsa Munda's movement laid the foundation for later **tribal welfare policies**.
- The **Chotanagpur Tenancy Act, 1908**, which restricted transfer of tribal land to non-tribals, was an indirect result of the movement.
- The Government of India honors his contribution through **Janjatiya Gaurav Divas (15 November)**.

2) Answer (b) Data Protection Board

Explanation

Assessment of Statements

- **National Cyber Security Coordinator as adjudicating authority**
 - The **National Cyber Security Coordinator (NCSC)** operates under the NSCS for cyber strategy and coordination.
 - It **does not** adjudicate personal data breach complaints under the DPDP Act.
- **Data Protection Board has civil court powers**
 - Under the **Digital Personal Data Protection Act, 2023**, the **Data Protection Board (DPB)** is the primary enforcement and adjudicatory authority.
 - It can:
 - **Investigate data breaches**
 - **Adjudicate complaints**
 - **Issue penalties**
 - Exercise powers of a **civil court** (summons, inquiry, obtaining evidence).
- **Central Information Commission jurisdiction**
 - The **CIC** enforces the **RTI Act**, not data protection legislation.

- **TRAI and personal data protection**
 - **TRAI** regulates telecom services, not **personal data privacy or breach adjudication**.

3) Answer (b) Change in basic prices in the wholesale market

Explanation

Assessment of Statements

- **WPI measures agricultural output growth**
 - **WPI does not measure output or production**; it measures **price changes** at the wholesale level.
- **WPI tracks basic prices of goods in wholesale markets**
 - Measures **changes in basic (producer) prices**, excluding taxes and transportation.
 - Covers **Primary Articles, Fuel & Power, Manufactured Products**.
 - Released monthly by **OEA, Ministry of Commerce & Industry**.
- **WPI reflects retail inflation or urban markets**
 - Retail inflation is captured by **CPI**, not **WPI**.
- **WPI and service sector wages**
 - **WPI does not** cover services; India's **WPI basket** is goods-only.

4) Answer (d) I and II only

Explanation

Assessment of Statements

- **Statement I: Largest alkaline lake**
 - Lake Turkana is the **world's largest alkaline lake** and the **largest desert lake**, with high salinity and unique hydrology.
- **Statement II: Inflow from Omo River**
 - Over **90%** of its inflow originates from **Ethiopia's Omo River**, making it crucial for the lake's ecological balance.
- **Statement III: Lake entirely in Kenya**
 - The lake's **northern tip extends into Ethiopia**, making it a **transboundary lake**.

5) Answer (b) II only

Explanation

Assessment of Statements

- **Statement I: Exercise Garuda is trilateral**
 - Exercise Garuda is **bilateral**, conducted **only between India and France**.
 - It aims at enhancing air combat skills, interoperability, and strategic partnership.
- **Statement II: 2025 venue — Mont-de-Marsan Air Base, France**
 - The 2025 edition is hosted at **Mont-de-Marsan**, a major French Air and Space Force base.
 - Demonstrates deepening **India–France defense cooperation**.

6) Answer (a) Eastern Ladakh

Explanation

Assessment of Options

- **Option (a): Eastern Ladakh**
 - Mudh–Nyoma airbase is located in **Eastern Ladakh**, near the LAC, at ~13,000 ft altitude.
 - Enhances **surveillance, logistics, and rapid deployment** in a sensitive sector.
- **Option (b): Arunachal Pradesh**
 - Different border theatre; not the site of this base.
- **Option (c): Uttarakhand**
 - Has its own border infrastructure but unrelated.
- **Option (d): Sikkim**
 - Also a border state, but not the airbase location.

7) Answer (a) Iran

Explanation

Assessment of Options

- **Option (a): Iran**
 - Lake Urmia lies in **northwest Iran** between East and West Azerbaijan provinces.
 - It is the **largest endorheic salt lake** in the Middle East.
- **Options (b), (c), (d)**
 - None of these countries contain Lake Urmia.

8) Answer (b) II only

Explanation

Assessment of Statements

- **Statement I: Glasgow Pact commits to \$1.3 trillion by 2035**
 - Incorrect.
 - The **Glasgow Climate Pact (2021)** calls for **\$40 billion per year for adaptation by 2025**, not trillions.
- **Statement II: NCQG target of at least \$300 billion annually by 2035**
 - Correct.
 - Negotiations for the **New Collective Quantified Goal (NCQG)** include a target of **\$300 billion annually** by 2035 for climate action support to developing nations.

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

Explanation

Assessment of Statements

- **Statement I: Zagros and Elbrus mountain ranges**
 - Iran contains both the **Zagros Mountains** (southwest to northwest) and **Elburz/Alborz Range** (north).
- **Statement II: Lake Urmia as largest endorheic lake**
 - Located in northwestern Iran, it is the **largest endorheic salt lake** in the Middle East.
- **Statement III: Caspian Sea as northern boundary**
 - Iran borders the **Caspian Sea** to the north.
- **Statement IV: Tehran located in southern Iran**
 - Incorrect.
 - **Tehran lies in north-central Iran**, near the Alborz Mountains.

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

Explanation

Assessment of Statements

- **Statement I: Rare vegetation in Ligarda swamp**

- Ligarda swamp inside **Saranda Forest** hosts rare flora such as **wild banana species, Piper species**, and endemic wetland vegetation.
- **Statement II: Landscape continuity with Odisha & Chhattisgarh**
 - Saranda's forests **merge with the forested belts of Odisha and Chhattisgarh**, forming an ecologically continuous landscape in eastern India.
- **Statement III: Located in Jharkhand, Chhotanagpur biogeographic zone**
 - Saranda lies in **West Singhbhum district, Jharkhand**, within the **Chhotanagpur Plateau biogeographic region**, known for sal-dominated forests.
- **Statement IV: Inhabited only by the Ho tribe**
 - While the **Ho tribe** is significant in the region, Saranda includes **multiple tribal groups**, not exclusively Ho.

11) Answer (d) II and III only

Explanation

Assessment of Statements

- **Statement I: Transmission mainly via sexual contact**
 - Hepatitis A is transmitted **primarily via the fecal–oral route** through **contaminated food and water**, not sexual contact alone.
- **Statement II: No chronic liver disease**
 - Hepatitis A causes **acute inflammation** of the liver but **does not lead to chronic liver disease**.
- **Statement III: Vaccines for A and B exist**
 - Effective vaccines exist for **Hepatitis A and B**.
 - **No vaccine** exists for **Hepatitis C**.

12) Answer (b) I, II and III

Explanation

Assessment of Statements

- **Statement I: Major funders include Bloomberg & Gates Foundation**
 - The Climate and Health Funders' Coalition was launched with support from **Bloomberg Philanthropies, Gates Foundation**, and several global funders.
- **Statement II: Extreme heat, pollution, infectious diseases as focus areas**
 - Immediate focus areas include:
 - **Extreme heat**
 - **Air pollution**
 - **Climate-sensitive infectious diseases**
 - **Strengthening climate–health data systems**
- **Statement III: Initial commitment of \$300 million**
 - The coalition announced an **initial \$300 million fund** for integrated climate and health interventions.

13) Answer (b) I, II and III

Explanation

Assessment of Statements

- **Statement I: Sahel drought due to rainbelt shift**
 - A weakened AMOC may shift the **tropical rain belt southward**, increasing **drought risk in the African Sahel**.
- **Statement II: Impacts on Indian monsoon timing**
 - AMOC slowdown affects **North Atlantic SSTs**, influencing global circulation and **delaying or weakening the Indian monsoon**.
- **Statement III: Cooling Europe & altering precipitation**
 - Collapse can cause:
 - **Significant cooling in Europe**
 - Disruption of **precipitation patterns** across North America, Africa, and Asia.

14) Answer (d) II only

Explanation

Assessment of Statements

- **✗ Statement I: No merger exception**
 - Incorrect.
 - The Anti-Defection Law **allows merger** if two-thirds of legislators of a party agree—hence not all mergers are disqualifiable.
- **Statement II: Inserted by 52nd Amendment, 1985**
 - The law was added as the **Tenth Schedule** through the **52nd Constitutional Amendment Act, 1985**.
- **✗ Statement III: Judicial review always immediate**
 - Judicial review is **not automatic or immediate**. Courts intervene **only in cases of mala fide, perversity, or undue delay** by the Speaker/Chairman.

15) Answer (c) To enable affordable trade finance, enhance competitiveness, and improve international market access for Indian exporters

Explanation

Assessment of Options

- **✗ Option (a): Focus only on large corporations**
 - EPM centers on **MSMEs**, first-time exporters, and labor-intensive sectors—not large corporations alone.
- **✗ Option (b): Limited to agriculture/export licensing**
 - EPM has a **broader mandate** involving finance, logistics, branding, and compliance across sectors.
- **Option (c): Affordable trade finance + competitiveness + market access**
 - Core objectives include:
 - **Affordable trade finance** (via Niryat Protsahan: interest subvention, credit guarantees)
 - **Enhanced export competitiveness** (via technology, logistics, compliance support)
 - **Improved global market access** (via Niryat Disha: branding, market intelligence, trade facilitation)
- **✗ Option (d): Import tariff changes**
 - EPM does **not** focus on import-side tariff reforms.

16) Answer (a) A protein toxin derived from castor beans, lethal even in small amounts

Explanation

Assessment of Options

- **Option (a): Ricin as a protein toxin**
 - Ricin is extracted from **castor bean waste (Ricinus communis)**.
 - Even **microgram quantities** can be fatal.
 - **No antidote** exists.
- **✗ Option (b): Synthetic explosive**
 - Ricin is **biological**, not explosive.
- **✗ Option (c): Radioactive material**
 - Ricin has **no radiological properties**.
- **✗ Option (d): Organophosphorus pesticide**
 - Not related to pesticide chemistry.

17) Answer (a) A faster solar storm overtaking an earlier slower one, resulting in a stronger storm

Explanation

Assessment of Options

- **Option (a): CME overtaking another CME**
 - A **faster CME** collides with a **slower CME**, creating a **merged, more intense geomagnetic storm**.

- Can disrupt **GPS, power grids, satellites**, and cause widespread **auroras**.
- **✗ Option (b): Linked to lunar eclipses**
 - No connection.
- **✗ Option (c): Occurs only during equinoxes**
 - Incorrect; solar CME timing is independent of equinoxes.
- **✗ Option (d): Coronal holes involved**
 - Coronal holes cause high-speed solar winds, not cannibal CME events.

18) Answer (b) National Tiger Conservation Authority

Explanation

Assessment of Options

- **✗ Option (a): Ministry of Agriculture**
 - Has **no authority** over wildlife translocations.
- **Option (b): NTCA under MoEFCC**
 - **NTCA**, a **statutory body** under the Wildlife (Protection) Act, 1972, implements **Project Cheetah**.
 - Oversees:
 - Translocation
 - Monitoring
 - Steering Committee functions
 - Compliance with conservation protocols
- **✗ Option (c): Zoological Survey of India**
 - Provides scientific inputs but does **not** implement the project.
- **✗ Option (d): Wildlife Institute of India**
 - Assists with expertise; not the lead implementing agency.

19) Answer (d) Ministry of Agriculture and Farmers Welfare

Explanation

Assessment of Options

- **✗ Option (a): Ministry of Consumer Affairs**
 - Unrelated to seed/variety protection.
- **✗ Option (b): Ministry of Environment**
 - Regulates biodiversity but **not plant variety rights**.
- **✗ Option (c): Ministry of Science & Technology**
 - Supports research but **does not administer** PPV&FR Act.
- **Option (d): Ministry of Agriculture & Farmers Welfare**
 - **PPV&FRA** is a **statutory authority** functioning under this ministry.
 - Responsibilities:
 - Variety registration
 - Breeders' & farmers' rights protection
 - Gene bank management
 - Benefit-sharing mechanisms

20) Answer (a) I only

Explanation

- Statement I** – Correct. NGHM sets a target of **5 million tonnes/year by 2030**, central to India's decarbonization and energy security strategy.
- ✗ Statement II** – Incorrect. The definition of *green hydrogen* is based on **lifecycle emissions**, not a rigid “ ≤ 2 kg CO₂/kg from renewables/biomass only” rule.

21) Answer (b) I and III only

Explanation

- Statement I** – Correct. The Quantum Diamond Microscope contributed to India's **first patent in quantum sensing**.
- ✗ Statement II** – Incorrect. It is **not exclusive to astronomy**; used in neuroscience, materials science, semiconductor testing.
- Statement III** – Correct. Uses **NV centres** in diamond for **nanoscale**

magnetic imaging at room temperature.
✗ Statement IV – Incorrect. It is **non-destructive**, not destructive.

22) Answer (d) I, III and IV only

Explanation

- Statement I** – Correct. FTIR is widely used for **material identification**.
- ✗ Statement II** – Incorrect. FTIR is **non-destructive** and requires **very small** samples.
- Statement III** – Correct. Provides **qualitative and quantitative** chemical data.
- Statement IV** – Correct. Operates using an **interferometer + computer-based Fourier Transform**.

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

Explanation

- ✗ Statement I** – Incorrect. Gynandromorphs are **not always sterile**.
- Statement II** – Correct. They show **both male and female traits**.
- Statement III** – Correct. Caused by **mitotic errors** during early development.
- Statement IV** – Correct. Seen more often in **sexually dimorphic species**.

24) Answer (d) Statement-I incorrect, Statement-II correct

Explanation

- ✗ Statement I** – Incorrect. PPV&FRA recognizes **farmers', breeders', and researchers' rights**, not farmers' rights alone.
- Statement II** – Correct. The Act aims to **promote new variety development** and **protect plant varieties**, balancing innovation with farmer welfare.

25) Answer (c) It releases large amounts of ancient organic carbon, reducing the global carbon budget.

Explanation

- Correct**. Thawing permafrost releases **ancient organic carbon**, adding CO₂ and methane to the atmosphere and **shrinking the global carbon budget**.
- ✗ Options (a), (b), (d)** are incorrect because permafrost thaw is not linked to **sea-ice increase, cooling, or volcanic activity**.

26) Answer (b) Two different liquid electrolytes undergoing redox reactions

Explanation

- Correct**. Flow batteries operate using **two separate liquid electrolytes** that undergo **redox reactions** across a membrane.
- ✗ Other options** misidentify characteristics of **solid-state** batteries, **lithium-ion dependence**, or ignore the **independent scaling** advantage.

27) Answer (d) Indian Council of Medical Research (ICMR)

Explanation

- Correct**. The National One Health Mission is **implemented by ICMR**, anchored at the **National Institute of One Health, Nagpur**.
- ✗ Other institutions**—MoHFW, IVRI, NCDC—play supporting roles but are **not the implementing agency**.

28) Answer (b) It is neither notified as a security nor regulated as a commodity derivative

Explanation

- Correct**. SEBI clarified that **digital gold is unregulated**—not a notified security nor a commodity derivative.
- ✗ Options (a), (c), (d)** misstate price determination, access channels, or regulatory jurisdiction.

29) Answer (b) I, II and III

Explanation

- Statement I**: Correct — The initiative promotes **equitable and**

sustainable **cooling**.
 Statement II: Correct — Focus areas include **passive and nature-based** cooling.

Statement III: Correct — Cooling equipment stock is projected to **triple by 2050**.

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

Explanation

- ✗ Statement I**: Incorrect — VINBAX is **bilateral**, not trilateral.
- Statement II**: Correct — It enhances **interoperability for UN peacekeeping**.
- Statement III**: Correct — The **6th edition** was held in **Hanoi**.
- Statement IV**: Correct — It is a **bilateral army exercise** between India and Vietnam.

31) Answer (c) I and III only

Explanation

- Statement I**: Correct — Digital gold prices **track physical gold**.
- ✗ Statement II**: Incorrect — It is **not a security** and **not regulated by SEBI**.
- Statement III**: Correct — It uses **electronic/blockchain platforms** for buying, selling, storing.

32) Answer (d) II only

Explanation

- ✗ Statement I**: Incorrect — Antiferromagnets have **alternating magnetic moments**, not aligned ones.
- Statement II**: Correct — **Altermagnets**, like antiferromagnets, show **no net magnetic field** outwardly.
- ✗ Statement III**: Incorrect — In ferromagnets, atomic moments **all align**, producing a **net field**.

33) Answer (c) I and III only

Explanation

- Statement I**: Correct — **BCG** offers **limited and variable protection** in adolescents and adults.
- ✗ Statement II**: Incorrect — No **new TB vaccine** has been licensed since **1920**.
- Statement III**: Correct — **WHO** is pushing for **equitable access** to new TB vaccines.

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

Explanation

- Statement I**: Correct — The mission integrates **human-animal-environment** surveillance for pandemic preparedness.
- Statement II**: Correct — India's **high population density, large livestock base, and zoonotic outbreaks** explain why such an integrated approach is essential.

35) Answer (b)

Explanation

- Correct**. India's SSC model is **demand-driven**, ensures **local ownership**, and gains **global credibility** through multilateral platforms.
- ✗ Options (a), (c), (d)** misrepresent India's approach (supply-driven, strategic lending, or political conditionality—none apply).

36) Answer

(b) Ministry of Housing and Urban Affairs

Explanation

- Correct**. DAMP is implemented under **Swachh Bharat Mission-Urban**

2.0 led by MoHUA.
 ✗ Other ministries do not oversee urban legacy waste management.

37) Answer (c)

Explanation

□ **Correct.** Neodymium is a **lanthanide metal** used in **high-strength permanent magnets** for EVs, wind turbines, and advanced technologies.
 ✗ Other options incorrectly classify it as a transition metal, metalloid, or actinide.

38) Answer (b) I and III only

Explanation

□ **Statement I:** Correct — BIRAC is a **not-for-profit PSU** under DBT.
 ✗ **Statement II:** Incorrect — The **National Biopharma Mission** is implemented by BIRAC, not the World Bank (only co-funded).
 □ **Statement III:** Correct — The **BioE3 Policy (2024)** promotes **high-performance biomanufacturing**.

39) Answer (b) I and II only

Explanation

□ **Statement I:** Correct — QCOs mandate the **BIS Standard Mark** for notified products.
 □ **Statement II:** Correct — Issued under the **BIS Act, 2016**, after consultation with BIS.
 ✗ **Statement III:** Incorrect — **BIS certification is mandatory only for notified products**, not all.

40) Answer (c) Phasing down hydrofluorocarbons (HFCs)

Explanation

□ **Correct.** The Kigali Amendment targets **HFC phase-down** under the Montreal Protocol.
 ✗ Other options relate to **mercury, leaded petrol, and carbon credits**, which are unrelated.

41) Answer (a) I only

Explanation

□ **Statement I:** Correct — The **CJI is Patron-in-Chief of NALSA**.
 ✗ **Statement II:** Incorrect — Legal aid eligibility for senior citizens is **not universal**; it varies by State rules.

42) Answer (d) I, II and III

Explanation

□ **Statement I:** Correct — **EEZ = 200 nautical miles**.
 □ **Statement II:** Correct — **Territorial Sea = 12 nautical miles**.
 □ **Statement III:** Correct — **Contiguous Zone = 24 nautical miles**.

All statements align with **UNCLOS (1982)**.

43) Answer (a) I, II and III

Explanation

□ **Statement I:** Correct — **VELC** is a primary remote-sensing payload.
 □ **Statement II:** Correct — Launched using **PSLV-C57**.
 □ **Statement III:** Correct — Positioned at **Lagrange Point L1** in a **halo orbit**.

44) Answer (d) III and IV only

Explanation

✗ **Statement I:** Incorrect — Smart proteins are **not only cultivated proteins**.
 ✗ **Statement II:** Incorrect — **Fermentation-derived proteins** are included.

□ **Statement III:** Correct — They reduce reliance on **conventional animal proteins**.
 □ **Statement IV:** Correct — **Plant-based proteins** are part of smart proteins.

45) Answer (a) I and II only

Explanation

□ **Statement I:** Correct — Molasses is produced from **both sugarcane and beet**.
 □ **Statement II:** Correct — It is known by **regional names** such as “exhausted honey.”
 ✗ **Statement III:** Incorrect — Molasses contains **minerals (Ca, Fe, Mg, K)** in addition to sugars and water.

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

Explanation

□ **Statement I:** Correct — The Act’s core aim is **preventing denial of justice due to economic disadvantage**, fulfilling **Article 39A**.
 □ **Statement II:** Correct — Creating **legal aid funds at national, state, and district levels** enables this objective.
 □ **Statement II explains Statement I** because funding mechanisms operationalize equal access to justice.

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

Explanation

□ **Statement I:** Correct — Mercury is the **only common metal liquid at room temperature**.
 □ **Statement II:** Correct — Mercury is a **potent neurotoxin**, damaging multiple systems.
 □ **However, toxicity does NOT explain liquid nature**, so II does not explain I.

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

Explanation

□ **Statement I:** Correct — UCBs’ **banking operations** have been under the **Banking Regulation Act, 1949** (since 1966), giving RBI regulatory control.
 □ **Statement II:** Correct — The **2020 amendment** strengthened RBI’s authority over **management and governance**, explaining how RBI’s oversight (Statement I) became more effective.

49) Answer (b) I, II and III

Explanation

□ **Statement I:** Correct — **ARISE** is aimed at **developing countries** for climate resilience.
 □ **Statement II:** Correct — **CIF** manages **Clean Technology Fund** and **Strategic Climate Fund**.

□ **Statement III:** Correct — **Spain and Germany pledged \$100 million** at COP-30.

50) Answer (b) I and II only

Explanation

□ **Statement I:** Correct — QCOs mandate **BIS Standard Mark** for notified products.
 □ **Statement II:** Correct — Issued under **BIS Act, 2016** after consultation with BIS.



✗ **Statement III:** Incorrect — BIS certification is **mandatory only for notified products**, not all goods.



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