

# Solutions

DATE : (17<sup>th</sup> Nov- 23<sup>rd</sup> Nov )

## 1. Answer: (a)

### Explanation

### Assessment of Statements

- **Statement-I: ✓ Correct**
  - The **Serious Fraud Investigation Office (SFIO)** is mandated to investigate **serious and complex corporate frauds**.
  - It is a **multi-disciplinary agency** comprising experts in **accounting, law, forensic auditing, taxation, and capital markets**.
  - Its role is central to ensuring **corporate governance, financial accountability, and investor protection**.
- **Statement-II: ✓ Correct**
  - The **Companies Act, 2013** grants **statutory status** to the SFIO under **Section 211**, empowering it to conduct in-depth investigations and prosecute offences.
  - Once a case is assigned to SFIO, **no other agency** can conduct parallel investigations—ensuring institutional independence.

**Conclusion:** Statement-II clearly explains Statement-I, as statutory recognition empowers SFIO to perform its core mandate effectively.

## 2. Answer: (d)

### Explanation

### Assessment of Statements

- **Statement-I: ✗ Incorrect**
  - **Naegleria fowleri** infection (Primary Amoebic Meningoencephalitis – PAM) is **not communicable** between humans.
  - There is **no evidence** of transmission via **person-to-person contact, air, droplets, or water ingestion**.
- **Statement-II: ✓ Correct**
  - Infection occurs when **contaminated warm freshwater enters the nose**, usually during:
    - swimming in lakes/ponds
    - diving
    - water sports
    - using contaminated water for nasal cleansing
  - The amoeba travels via the **olfactory nerve** to the brain, causing fatal inflammation.

### Conclusion

- Statement-I is incorrect, Statement-II is correct.
- Thus, **(d)** is the correct option.

## 3. Answer: (a)

### Explanation

### Assessment of Statements

- **Statement-I: ✓ Correct**
  - The **Code on Social Security, 2020** explicitly extends **social security benefits** (PF, insurance, maternity benefits, ESIC) to:
    - **Gig workers**
    - **Platform workers**
    - **Unorganized sector workers**
  - This inclusion is a landmark shift acknowledging India's evolving workforce structures.
- **Statement-II: ✓ Correct**
  - The Code merges **nine major social security laws**, creating a **unified framework** that reduces fragmentation and simplifies compliance.
  - It enhances the outreach of welfare measures across formal and informal sectors.

### Conclusion

- Statement-II logically supports Statement-I.
- Hence, **(a)** is the correct answer.

## 4. Answer: (b)

### Explanation

### Assessment of Pairs

1. **Central India – Rise in Extreme Rainfall: ✓ Correct**
  - Multiple climate assessments (IMD, IITM) show a **significant surge in extreme rainfall events**, contributing to floods and crop losses.
2. **Indo-Gangetic Plains – Increased Heat Stress: ✓ Correct**
  - The region faces **intensifying heatwaves**, rising **wet-bulb temperatures**, and declining monsoon rainfall—affecting agriculture and public health.
3. **Western Coast – Accelerated Warming: ✗ Incorrect**
  - The dominant climate signals here are:
    - **more severe tropical cyclones,**
    - **extreme rainfall events,**
    - **extreme sea-level occurrences,**
  - not specifically a unique category of **accelerated warming**.

**Conclusion:** Only two pairs (1 and 2) are correct → **Answer: (b).**

### 5. Answer: (b)

#### Explanation

#### Assessment of Pairs

1. **FSSAI limits TFA to 2% – ✓ Correct**
  - FSSAI mandates a **2% cap on industrial trans fats** to reduce cardiovascular risks and align with WHO recommendations.
2. **Eat Right India Campaign – ✓ Correct**
  - A flagship initiative promoting **safe, healthy, and sustainable diets**, including awareness against UPF consumption.
3. **GST on Aerated Beverages – ✗ Incorrect**
  - The GST rate is **40%**, not **18%**, for **sugar-sweetened aerated beverages**.
  - This higher tax aims to discourage consumption of unhealthy drinks.

**Conclusion:** Only two pairs are correct → **Answer: (b).**

### 6. Answer: (d)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - This describes **oil spill mock drills**, typically conducted under the Ministry of Environment or related agencies.
  - **Sagar Kavach**, however, is **not** an environmental drill.
- **Option (b): ✗ Incorrect**
  - This resembles a **bilateral naval exercise**, whereas Sagar Kavach is **domestic, multi-agency, and Coast Guard-led**.
- **Option (c): ✗ Incorrect**
  - There is **no tri-service amphibious disaster management** exercise named Sagar Kavach.
- **Option (d): ✓ Correct**
  - **Sagar Kavach** is a **biannual coastal security exercise** led by the **Indian Coast Guard**, assessing:
    - **Preparedness against infiltration and maritime threats**
    - **Coordination among central & state agencies**
    - **Strength of multi-layered coastal security**

**Conclusion:** Option (d) matches the official description of Sagar Kavach.

### 7. Answer: (b)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - The framework is **not about subsidies** for deep sea fishing vessels.
- **Option (b): ✓ Correct**
  - The framework establishes a **national digital traceability system**, ensuring:
    - **End-to-end tracking** of seafood
    - **Farm-to-plate / catch-to-consumer** transparency
    - Adoption of **blockchain, IoT, QR codes, GPS**
    - Alignment with **global food safety norms**
- **Option (c): ✗ Incorrect**
  - No licensing regime for aquaculture operators is introduced.
- **Option (d): ✗ Incorrect**
  - It does **not** regulate Marine Protected Areas or restrict EEZ fishing.

**Conclusion:** Option (b) accurately reflects the purpose of the 2025 Traceability Framework.

### 8. Answer: (b)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - Although from UP, the **Meerut Bugle** is **not defined by religious festivals**.
- **Option (b): ✓ Correct**
  - It is strongly connected with:
    - **Indian military tradition**
    - **Regimental ceremonies**
    - **Parades, military academies, official protocols**
  - The **GI tag** protects its heritage craftsmanship.
- **Option (c): ✗ Incorrect**
  - It is **not** used in classical dance forms.
- **Option (d): ✗ Incorrect**
  - While a musical instrument, its primary association is **not** folk music.

**Conclusion:** Option (b) is the correct association.

### 9. Answer: (a)

#### Explanation

#### Assessment of Options

- **Option (a): ✓ Correct**
  - The **Central Industrial Security Force (CISF)** has been officially designated as the **Recognised Security Organisation (RSO)** under the ISPS Code.
  - Responsibilities include:
    - **Port facility security audits**
    - **Risk assessment**
    - **Ensuring compliance** with ISPS standards
    - **Overseeing port security plans**
- **Option (b): ✗ Incorrect**



- The **Indian Navy** is **not** the RSO.
- **Option (c): ✗ Incorrect**
  - The **BSF** secures **land borders**, not seaports.
- **Option (d): ✗ Incorrect**
  - **NDRF** focuses on **disaster response**, not maritime facility security.

**Conclusion:** Option (a) is the correct and official designation.

### 10. Answer: (a)

#### Explanation

#### Assessment of Options

- **Option (a): ✓ Correct**
  - **Mount Semeru** is located in **East Java**, Indonesia.
  - It is a **stratovolcano**, the **highest peak on Java**, and part of the **Pacific Ring of Fire**.
- **Option (b): ✗ Incorrect**
  - Papua lies in eastern Indonesia and is **not** the site of Semeru.
- **Option (c): ✗ Incorrect**
  - Sulawesi hosts other volcanic formations but **not Semeru**.
- **Option (d): ✗ Incorrect**
  - Northern Sumatra has volcanoes like **Sinabung**, but **Semeru is not located there**.

**Conclusion:** Option (a) correctly identifies the location of Mount Semeru.

### 11. Answer: (d)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - Articles **200 and 201** do **not** provide any concept of *deemed assent*.
  - No timeline is prescribed for the Governor/President to act on a Bill.
- **Option (b): ✗ Incorrect**
  - Courts **cannot** impose timelines or assume assent after expiration of such timelines.
  - The Supreme Court has recently clarified that **judiciary cannot create "deemed assent"**.
- **Option (c): ✗ Incorrect**
  - There is **no constitutional mechanism** that triggers automatic assent if the Governor delays action.
- **Option (d): ✓ Correct**
  - Correctly states that the Constitution provides:
    - **Four choices** to the Governor under Article 200
    - **No provision** for deemed assent
  - Judicially-imposed timelines or fictional assent would violate **separation of powers** and **federalism**.

**Conclusion:** Option (d) captures the correct constitutional position on assent to Bills.

### 12. Answer: (d)

#### Explanation

#### Assessment of Options

- **All other options** describe different categories of weapons or platforms not linked to Javelin.
- **Option (d): ✓ Correct**
  - The **FGM-148 Javelin** is:
    - **Man-portable**
    - **Fire-and-forget** (infrared seeker locks target)
    - **Anti-tank guided missile**
    - Capable of **top-attack** against armored vehicles
  - Enhances **infantry anti-armor capability** in diverse terrains.

**Conclusion:** Option (d) correctly defines the Javelin missile system.

### 13. Answer: (a)

#### Explanation

#### Assessment of Options

- **Option (a): ✓ Correct**
  - Seychelles is an **archipelago of 155 islands**, located **northeast of Madagascar** in the western Indian Ocean.
  - Spread across the **Mascarene Plateau**, comprising both **granite** and **coralline** islands.
- **Option (b): ✗ Incorrect**
  - Seychelles is **not a continental island nation** located in the South Atlantic.
- **Option (c): ✗ Incorrect**
  - Seychelles is **not part of East African mainland coast**.
- **Option (d): ✗ Incorrect**
  - Seychelles has **more than 100 islands**, not fewer than 20.

**Conclusion:** Option (a) accurately describes Seychelles' geographical identity.

### 14. Answer: (d)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - False urgency is only **one** type of dark pattern, not its full definition.
- **Option (b): ✗ Incorrect**
  - Dark patterns are **not limited** to recommendation systems.
- **Option (c): ✗ Incorrect**
  - Hidden costs are just **one manifestation** (basket sneaking), not the general concept.
- **Option (d): ✓ Correct**

- **Dark Patterns** are *deceptive online design tactics* used to:
  - Manipulate user decision-making
  - Induce unintended purchases/subscriptions
  - Extract personal data
- Identified and regulated under **2023 Dark Patterns Guidelines**.

**Conclusion:** Option **(d)** is the comprehensive definition.

**15. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Japan initiated the **Joint Crediting Mechanism (JCM)** in **2013** to promote low-carbon technologies through bilateral cooperation.
- **Statement II: ✗ Incorrect**
  - JCM covers **multiple sectors**, including:
    - transport,
    - energy efficiency,
    - waste management,
    - industrial processes
  - It is **not limited to renewable energy**.
- **Statement III: ✓ Correct**
  - JCM operates under **Article 6 of the Paris Agreement** as a cooperative approach.
  - It currently spans **30+ partner countries**.

**Conclusion:** Only I and III are correct → **Answer: (b)**.

**16. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Judicial review applies only to **procedural infirmities, mala fide, or constitutional violations**.
  - Courts cannot review the **merits** of a Governor/President's assent decision.
- **Statement II: ✗ Incorrect**
  - The Constitution provides **no concept of "deemed assent"** under Articles 200 or 201.
  - Supreme Court has expressly rejected fictional/automatic assent.
- **Statement III: ✓ Correct**
  - The Court cannot prescribe **timelines or deadlines** for the President/Governor to act.
  - Doing so would violate **separation of powers**.
- **Statement IV: ✗ Incorrect**
  - Article 201 does **not specify any timeline** for presidential action on Bills reserved by the Governor.

**Conclusion:** Only I and III are correct → **Answer: (b)**.

**17. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Global Mutirão promotes global climate action aligned with the **Paris Agreement's 1.5°C goal** through collective mobilization.
- **Statement II: ✓ Correct**
  - It is explicitly inspired by **Brazilian and Indigenous traditions** of communal labor ("mutirão").
- **Statement III: ✓ Correct**
  - Uses **digital hubs/platforms** like the **Maloca** to connect diverse climate actors and scale local-global action.
- **Statement IV: ✗ Incorrect**
  - Participation is *not limited to governments*.
  - It includes **cities, civil society, private sector, youth groups**, etc.

**Conclusion:** Only I, II, and III are correct → **Answer: (c)**.

**18. Answer: (d)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - India is the **world's largest producer, consumer, and importer** of pulses due to high domestic demand and production constraints.
- **Statement II: ✓ Correct**
  - The **National Mission on Sustainable Agriculture (NMSA)** focuses on **organic, bio-fertilizers, soil health**, and climate-resilient practices.
- **Statement III: ✓ Correct**
  - **PM Krishi Sinchayee Yojana (PMKSY)** aims to enhance **irrigation development**, improve **water-use efficiency**, and achieve "**Har Khet Ko Pani**."

**Conclusion:** All three statements are correct → **Answer: (d)**.

**19. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - The Supreme Court accepted a **uniform definition** of an Aravalli hill based on **minimum elevation and proximity**, aiding conservation and governance.
- **Statement II: ✓ Correct**
  - **Guru Shikhar (1,722 m)** on **Mount Abu** is the **highest peak** in the Aravalli range.



- **Statement III: ✓ Correct**
  - The Aravalli range forms a **watershed** dividing the **Ganga basin (east)** and **Indus basin (west)**.

**Conclusion:** All statements are correct → but as per the given key, **Answer: (b) I, II and III.**

### 20. Answer: (c)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - Transportation mainly emits **CO<sub>2</sub>**, not methane.
- **Option (b): ✗ Incorrect**
  - Forest fires release methane but are **not the largest human-induced source**.
- **Option (c): ✓ Correct**
  - **Agriculture** is the **largest anthropogenic methane source** globally (~40%).
  - Major contributors:
    - **Enteric fermentation** in livestock
    - **Rice paddies**
    - **Manure management**
- **Option (d): ✗ Incorrect**
  - Cement production emits **CO<sub>2</sub>**, not methane.

**Conclusion:** Agriculture is the dominant anthropogenic methane source → **Answer: (c).**

### 21. Answer: (d)

#### Explanation

#### Assessment of Options

- **Option (a): ✗ Incorrect**
  - Evershed Effect is not about coronal plasma jets.
- **Option (b): ✗ Incorrect**
  - It has no relation to solar flare cooling.
- **Option (c): ✗ Incorrect**
  - It is unrelated to UV emissions.
- **Option (d): ✓ Correct**
  - The **Evershed Effect** describes:
    - **Horizontal, radial outflow of gases**
    - In the **penumbra** of sunspots
    - Observed first at **Kodaikanal Observatory (1909)**

**Conclusion:** Option (d) correctly defines the phenomenon.

### 22. Answer: (a)

#### Explanation

#### Assessment of Options

- **Option (a): ✓ Correct**
  - The **CE20 cryogenic engine** uses:
    - **Liquid Hydrogen (LH<sub>2</sub>)** – fuel
    - **Liquid Oxygen (LOX)** – oxidizer
  - Both stored at **cryogenic temperatures**.

- **Option (b): ✗ Incorrect**
  - RP-1 and N<sub>2</sub>O<sub>4</sub> not used in CE20.
- **Option (c): ✗ Incorrect**
  - Solid propellants are not used in cryogenic engines.
- **Option (d): ✗ Incorrect**
  - CE20 is **not** methane-fueled.

**Conclusion:** CE20 uses LH<sub>2</sub>-LOX → **Answer: (a).**

### 23. Answer: (a)

#### Explanation

#### Assessment of Statements

- **Statement I: ✓ Correct**
  - Named "**Moon Bear**" due to crescent-shaped chest patch.
- **Statement II: ✓ Correct**
  - Habitat spans **Himalayas, Northeast India, Myanmar, Bhutan, Nepal, China**.
- **Statement III: ✗ Incorrect**
  - It is **IUCN: Vulnerable**, not "Least Concern".
  - Listed under **Schedule I** of the Wildlife Protection Act.
- **Statement IV: ✗ Incorrect**
  - The species is **mostly nocturnal**, prefers **dense forests**, not alpine grasslands.

**Conclusion:** Only I and II are correct → **Answer: (a).**

### 24. Answer: (b)

#### Explanation

#### Assessment of Statements

- **Statement I: ✓ Correct**
  - Goldilocks environment features **steady, sustainable growth**.
- **Statement II: ✗ Incorrect**
  - High inflation contradicts a Goldilocks scenario; it requires **low, stable inflation**.
- **Statement III: ✓ Correct**
  - Such an environment promotes **stable policymaking** and **price stability**.
- **Statement IV: ✓ Correct**
  - It represents **balanced economic expansion** without overheating or recession.

**Conclusion:** Only I, III, and IV are correct → **Answer: (b).**

### 25. Answer: (d)

#### Explanation

#### Assessment of Statements

- **Statement I: ✓ Correct**
  - **Article 323-A** empowers Parliament to establish **administrative tribunals** for service matters.

- **Statement II: ✓ Correct**
  - **Part XIV-A** (Articles 323-A & 323-B) was introduced through the **42nd Constitutional Amendment, 1976**.
- **Statement III: ✗ Incorrect**
  - The claim that tribunals must be established *only* by Parliament is wrong.
  - Under **Article 323-B**, both **Parliament and State Legislatures** may create tribunals for subjects like taxation, land reforms, industrial disputes, etc.

**Conclusion:** Only I and II are correct → **Answer: (d).**

**26. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✗ Incorrect**
  - CRISPR systems use **two components**:
    - **guide RNA (gRNA)**: identifies target sequence
    - **Cas9 protein**: performs the cut
  - It is **not** a single-molecule mechanism.
- **Statement II: ✓ Correct**
  - **Cas9** acts as **molecular scissors**, generating double-strand breaks in DNA.
- **Statement III: ✓ Correct**
  - **enFnCas9**, developed by **CSIR-IGIB**, is a **high-fidelity Cas9 variant** derived from *Francisella novicida*.

**Conclusion:** Only II and III are correct → **Answer: (a).**

**27. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Sickle-cell disease (SCD) is a **genetic disorder** affecting **haemoglobin (HBB gene mutation)**.
- **Statement II: ✓ Correct**
  - Prevalence is significantly higher among **tribal populations** in central and eastern India.
- **Statement III: ✓ Correct**
  - **BIRSA 101** is a **gene therapy candidate** for SCD developed by **CSIR-IGIB**, named after **Birsa Munda**.

**Conclusion:** All three statements are correct → **Answer: (a).**

**28. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**

- Methane has an average atmospheric lifetime of **~12 years**, making it a short-lived but powerful climate pollutant.

- **Statement II: ✗ Incorrect**

- Methane does **not** have *lower* warming potential than CO<sub>2</sub>.
- Over a **20-year period**, methane's **GWP ≈ 86 times CO<sub>2</sub>**.

**Conclusion:** Statement-I correct; Statement-II incorrect → **Answer: (c).**

**29. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - **TnpB proteins** (~400–500 amino acids) are much smaller than **Cas9** (~1,300 amino acids), aiding genome editing.
- **Statement II: ✓ Correct**
  - Their compact size enables **more efficient delivery** into cells, especially using **viral vectors**.

**Relationship Between Statements**

- Statement-II provides an **advantage** but does **not logically explain** the factual claim in Statement-I.

**Conclusion:** Both statements are correct, but II does not explain I → **Answer: (b).**

**30. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - **Antimicrobial Resistance (AMR)** is a major **global health threat**, contributing to nearly **5 million deaths annually**.
  - It leads to **ineffective treatments**, prolonged illness, rising healthcare costs, and systemic burden on public health.
- **Statement II: ✗ Incorrect**
  - AMR occurs **because** microorganisms such as **bacteria, viruses, fungi, and parasites evolve resistance** to antimicrobials.
  - The statement contradicts the fundamental cause of AMR.

**Conclusion:** Statement-I correct; Statement-II incorrect → **Answer: (c).**

**31. Answer: (d)**

**Explanation**

**Assessment of Options**



- **Codex Alimentarius Commission (CAC)** was established by **FAO & WHO (1963)**.
- Its mandate is to:
  - ✓ **Protect consumer health**
  - ✓ **Ensure fair practices in the food trade**
- India's re-election to the Codex Executive Committee underscores its role in global food standards development.

**Conclusion:** Correct objective → **Answer: (d).**

**32. Answer: (a)**

**Explanation**

**Assessment of Options**

- **NAP-AMR 2.0 (2025–29)** aligns with WHO's **Global Action Plan on AMR** and addresses gaps from NAP-AMR (2017–21).
- AMR is defined as:
  - ✓ **A phenomenon where microorganisms evolve mechanisms to survive drugs designed to kill them.**

**Conclusion:** Option (a) gives the correct definition of AMR → **Answer: (a).**

**33. Answer: (a)**

**Explanation**

**Assessment of Options**

- **Climate Change Performance Index (CCPI)** is jointly published by:
  - ✓ **Germanwatch**
  - ✓ **NewClimate Institute**
  - ✓ **Climate Action Network (CAN)**
- No country ranked in the top 3 due to insufficient climate performance.
- India dropped to **23rd** (medium performer).

**Conclusion:** CCPI is published by Germanwatch and partners → **Answer: (a).**

**34. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✗ Incorrect**
  - The **US** was the primary broker of the Gaza Peace Plan, supported by **Egypt and Qatar**.
  - Thus, Egypt alone was not the initiator.
- **Statement II: ✓ Correct**
  - A key provision is the **mutual release of hostages and detainees**, forming the core humanitarian component of the plan.

**Conclusion:** Only Statement II is correct → **Answer: (b).**

**35. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - The **Climate Change Performance Index (CCPI)** is jointly published by:
    - **Germanwatch**
    - **NewClimate Institute**
    - **Climate Action Network (CAN)**
- **Statement II: ✓ Correct**
  - In the latest CCPI report:
    - **No country is ranked in the top 3.**
    - **Denmark** is placed **4th**, followed by the **UK and Morocco**.

**Conclusion:** Both statements are correct → **Answer: (c).**

**36. Answer: (d)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - A **base effect** occurs when an unusually low/high base-year value distorts growth or inflation rates.
- **Statement II: ✓ Correct**
  - Widely applied in **inflation analysis**, GDP growth interpretation, and other macroeconomic indicators.
- **Statement III: ✓ Correct**
  - This statement correctly defines the **base effect** in macroeconomics.
- **Statement IV: ✗ Incorrect**
  - The base effect is **not limited to agriculture**—it operates across **all economic sectors**.

**Conclusion:** Only I, II, and III are correct → **Answer: (d).**

**37. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - The portal aims to provide **transparent, accessible trade intelligence** for exporters and policymakers.
- **Statement II: ✗ Incorrect**
  - It does **not replace customs clearance systems** (e.g., ICEGATE, SWIFT).
  - Its scope is **trade analytics**, not operational customs clearance.
- **Statement III: ✓ Correct**
  - It unifies previously fragmented databases and gives **market insights** to small and remote businesses.

**Conclusion:** Only I and III are correct → **Answer: (a).**

**38. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Guru Tegh Bahadur advocated **universal brotherhood, religious liberty, and social reform.**
- **Statement II: ✓ Correct**
  - He founded **Chak Nanki**, which later became **Anandpur Sahib.**
- **Statement III: ✗ Incorrect**
  - He was the **youngest son of Guru Hargobind Ji**, not the eldest.
  - He was the **ninth Sikh Guru**, not the seventh.

**Conclusion:** Only I and II are correct → **Answer: (c).**

**39. Answer: (c)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - PMFBY **excludes** risks from **war, nuclear events, malicious damage, sabotage, etc.**
- **Statement II: ✓ Correct**
  - Premiums under PMFBY:
    - **2% – Kharif**
    - **1.5% – Rabi**
    - **5% – Commercial & horticultural crops**
  - Thus, commercial/horticultural premiums are **higher.**
- **Statement III: ✓ Correct**
  - PMFBY **covers** **prevented sowing/planting**, including cases due to **deficit rainfall.**

**Conclusion:** All statements are correct → **Answer: (c).**

**40. Answer: (d)**

**Explanation**

**Assessment of Option**

- **Article 280: ✓ Correct**
  - Article **280(1)** mandates that the **President constitute a Finance Commission every five years** or earlier.
  - It outlines its functions:
    - Distribution of **tax revenues** between Union and States
    - Principles for **grants-in-aid**
    - Measures to strengthen **local government finances**

**Conclusion:** Correct constitutional basis → **Answer: (d).**

**41. Answer: (c)**

**Explanation**

**Assessment of Option**

- **Targeted use of biological agents based on individual genetic profiles: ✓ Correct**
  - Precision biotherapeutics tailors:
    - **Gene therapies**
    - **Cell-based treatments**
    - **mRNA platforms**
    - **Monoclonal antibodies**
  - Designed according to an individual's **genetic, lifestyle, and environmental profile.**

**Conclusion:** Correct description of precision biotherapeutics → **Answer: (c).**

**42. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - AfCFTA expands a **single African market**, enhancing opportunities for Indian firms and investors.
- **Statement II: ✓ Correct**
  - India is Africa's **third-largest trading partner**, crossing **\$100 billion** in trade.
- **Statement III: ✗ Incorrect**
  - India's Africa engagement includes:
    - **Digital partnerships**
    - **IT and capacity-building programs**
    - **Scholarships and training**
  - It is **not limited to trade.**

**Conclusion:** Only I and II are correct → **Answer: (a).**

**43. Answer: (b)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - **Digital Twin models** simulate real-time river conditions, enabling predictive planning and flood management.
- **Statement II: ✗ Incorrect**
  - RBM involves **multiple stakeholders**:
    - **Local governments**
    - **Civil society**
    - **Private sector**
    - **Community groups**
  - Not limited to central authorities.
- **Statement III: ✓ Correct**
  - RBM integrates:
    - **Geospatial databases**
    - **Multi-stakeholder coordination**



- **Basin-wide** policies for sustainable hydrology.

**Conclusion:** Only I and III are correct → **Answer: (b).**

**44. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Gandhi compared the destruction of India's indigenous education system to "**a beautiful tree being cut down**," condemning the colonial model.
- **Statement II: ✗ Incorrect**
  - Macaulay's Minute (1835) promoted **English-medium education** and dismissed Indian classical learning, not the other way around.

**Conclusion:** Only Statement I is correct → **Answer: (a).**

**45. Answer: (a)**

**Explanation**

**Assessment of Statements**

- **Statement I: ✓ Correct**
  - Lagrange points are positions in space where **gravitational forces and centrifugal force** balance, allowing spacecraft to maintain stable positions with minimal fuel.
- **Statement II: ✓ Correct**
  - Reduced fuel consumption is a **direct consequence** of this equilibrium, enabling long-term station-keeping with minimal energy.

**Conclusion:** Both statements are correct, and Statement-II explains Statement-I → **Answer: (a).**

**46. Answer: (b)**

**Explanation**

**Assessment of Options**

- **Milky white colour, natural beauty, durability: ✓ Correct**
  - Ambaji Marble is known for its:
    - **Milky white appearance**
    - **High durability**
    - **Smooth texture & aesthetic appeal**
  - These unique characteristics justify its **GI tag** status.

**Conclusion:** Correct attributes of Ambaji Marble → **Answer: (b).**

**47. Answer: (b)**

**Explanation**

**Assessment of Options**

- **A channel connecting the Atlantic Ocean and the Caribbean Sea: ✓ Correct**
  - The **Anegada Passage** is a major maritime route in the **West Indies**, connecting:
    - **Atlantic Ocean → Caribbean Sea**
  - It lies between the **British Virgin Islands** and the **Leeward Islands**.

**Conclusion:** Correct geographical description → **Answer: (b).**

**48. Answer: (b)**

**Explanation**

**Assessment of Options**

- **Uzbekistan: ✗ Incorrect**
  - Uzbekistan is **NOT** a member of the EAEU.

**Correct Membership (✓)**

- Armenia
- Belarus
- Kazakhstan
- Kyrgyzstan
- Russia

**Conclusion:** Since the question asks which *is not* a member, the correct answer is **(b) Uzbekistan**.

**49. Answer: (a)**

**Explanation**

**Assessment of Options**

- **Honouring mystical celestial fairies (Saunis) through rituals and dance: ✓ Correct**
  - The **Raulane Festival** in **Kinnaur, Himachal Pradesh** is a **5,000-year-old tradition** dedicated to:
    - **Celestial fairies called Saunis**
    - **Ritualistic performances**
    - **Processions to the Nagin Narayan Temple**
    - **Slow devotional dance symbolizing divine union**

**Conclusion:** Option (a) correctly captures the essence of the festival → **Answer: (a).**

**50. Answer: (b)**

**Explanation**

**Assessment of the Option**

- **✓ Correct –**
  - The **ESCAPADE mission (Escape and Plasma Acceleration and Dynamics Explorers)** is explicitly designed to study:
    - **Solar wind interaction**
    - **Mars' induced magnetosphere**
    - **Mechanisms of atmospheric escape**

- These processes are central to understanding Mars' **atmospheric evolution** and the planet's past habitability.
- The mission uses a "**loiter orbit**" near Earth's **Lagrange Point 2 (L2)** for fuel optimization before its Mars transfer trajectory.

**Conclusion:** The mission's core purpose is studying the **interaction between solar wind and Mars' magnetic environment** → **Answer: (b).**

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