

Solutions

DATE : 31st March- 6th April

1) Correct Answer: (c) All three

Explanation:

- Statement 1: Correct

- Article 293(2) empowers the **Union Government** to impose conditions while granting loans to states.
- This ensures **fiscal discipline** and **inter-governmental coordination**.

- Statement 2: Correct

- As per Article 293(3), a state requires **prior consent** of the Centre to raise **external loans** (i.e., from foreign sources).
- This avoids conflicting **international financial obligations**.

- Statement 3: Correct

- Article 293(1) allows states to raise loans **within India** on the **security of their Consolidated Fund**.
- This gives states fiscal autonomy while maintaining legal accountability.

2) Correct Answer: (a) Only one

Explanation:

- Statement 1: Correct

- The **buffer zone** is designed to **reduce human-wildlife conflict** and promote **sustainable livelihoods**.
- Acts as a **transition zone** between core areas and human settlements.

- Statement 2: Incorrect

- Eco-tourism** is generally allowed in **buffer zones**, not core zones.
- The **core zone**, being ecologically sensitive, allows minimal or no tourism to avoid **disturbance to tigers**.

- Statement 3: Correct

- The **core zone** is designated as **Critical Tiger Habitat (CTH)** under the **Wildlife Protection Act, 1972** (as amended in 2006).
- It receives the **highest level of protection** with stringent regulation on human activities.

3) Correct Answer: (d) Utilizes mechanical and biological filtration to recycle water

Explanation:

- RAS** is a **closed-loop system** that minimizes water usage.

- Key features:

- Uses **mechanical filters** to remove solid waste.
- Employs **biological filters** (nitrifying bacteria) to convert harmful ammonia into nitrates.
- Maintains **controlled environment** – temperature, pH, oxygen.

- Promotes **sustainable aquaculture**, reducing **antibiotic dependency** and **water pollution**.

4) Correct Answer: (b) Only two

Explanation:

- Statement 1: Correct

- Biofuels offer an **alternative to fossil fuels** and utilize **agricultural waste**, enhancing **energy security**.

- Statement 2: Correct

- Bioethanol (liquid fuel) and **biogas** (gaseous fuel) can be **derived from rice straw** through microbial fermentation.

- Statement 3: Incorrect

- Biofuels **reduce** but do **not eliminate** greenhouse gas emissions.
- Lifecycle emissions** (production, transport, combustion) still exist, though lower than fossil fuels.

5) Correct Answer: (c) All three

Explanation:

- Composting:**

- Converts rice straw into **organic manure**, enhancing **soil nutrients and fertility**.

- Mushroom Cultivation:**

- Rice straw serves as a **low-cost substrate**.
- Generates **additional income** for farmers through **edible mushroom farming**.

- Soil Incorporation:**

- Incorporating rice straw into soil **increases water retention**, aeration, and microbial activity.
- Helps in **carbon sequestration** and **reduces the need for burning**.

6) Correct Answer: (c) All three

Explanation:

- Statement 1: Correct

- CIL is the **world's largest coal producer** and a major contributor to India's energy sector.

- Statement 2: Correct

- CIL contributes to around **83% of India's coal production**, meeting nearly **40% of commercial energy needs**.

- Statement 3: Correct

- In **2024**, CIL was awarded the '**Green World Environment Award**' in the **CSR category** for sustainable initiatives.

7) Correct Answer: (a) 2 only

Explanation:

- Statement 1: Incorrect

- The scheme focuses on institutions with high **NIRF rankings**, not **NAAC accreditation**.

- Statement 2: Correct

- The **Vidyalaxmi Portal** simplifies **education loan processes**, integrates multiple banks, and allows tracking.

- Statement 3: Incorrect

- NBA rankings** are not used as a criterion. Only **NIRF rankings** are used to identify eligible institutions.

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

Explanation:

- Statement 1: Correct

- CENVAT (Central Value Added Tax)** allows credit on taxes paid on **inputs and capital goods**, simplifying tax for manufacturers and service providers.

- Statement 2: Incorrect

- It actually **reduces costs** by **eliminating cascading taxes** (tax on tax), thus lowering the final price.

- Statement 3: Correct

- Reduced tax burden encourages reinvestment, technological upgrade, and productivity gains.

9) **Correct Answer: (c) Restricted tributary flow and high evaporation rates**

Explanation:

- The **Jordan River**, the main source for the Dead Sea, has been **heavily diverted** for agriculture and domestic use.
- **High evaporation rates**, due to **arid climate** and **closed basin**, lead to **water loss >1 meter per year**.
- Other reasons like overfishing or salinity **do not** significantly impact the water level decline.

11) **Correct Answer: (a) Only one**

Explanation:

- **Statement 1: Correct**
 - AFSPA was enacted in 1958 to enable the armed forces to maintain public order in disturbed areas, often affected by insurgency or ethnic conflicts.
- **Statement 2: Incorrect**
 - AFSPA is not applicable in all northeastern states. It is currently in force in Assam, Nagaland, parts of Manipur and Arunachal Pradesh, not in Mizoram, Tripura, Meghalaya, or Sikkim.
- **Statement 3: Correct**
 - The law permits armed forces to open fire after giving due warning if any person is found violating laws in a disturbed area.

◆ Only one statement is incorrect, hence option (a) is correct.

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

Explanation:

- **Statement 1: Correct**
 - The International Atomic Energy Agency (IAEA) conducts regular inspections under safeguards agreements, especially for countries under the Nuclear Non-Proliferation Treaty (NPT).
- **Statement 2: Incorrect**
 - IAEA does not supervise nuclear disarmament. That responsibility lies with bodies like the UNODA (United Nations Office for Disarmament Affairs).
- **Statement 3: Incorrect**
 - IAEA does not ensure compliance with all nuclear-related UNSC resolutions; it only supports implementation of specific resolutions when mandated.

13) **Correct Answer: (d) Star-eyed Bush Frog**

Explanation:

- The Star-eyed Bush Frog (*Raorchestes signatus*) is endemic to the Nilgiri Biosphere Reserve.
- It thrives in the montane forests and moist grasslands of the Western Ghats, a UNESCO World Heritage Site.
- Other species mentioned:
 - Bengal Tiger – Found across India.
 - Olive Ridley Turtle – Found along the east coast.
 - Great Indian Bustard – Native to Rajasthan and grasslands of western India.

14) **Correct Answer: (d) None**

Explanation:

- **Statement 1: Incorrect**
 - Managed honey bees are vulnerable to pathogen spillback from wild pollinators, making them susceptible to virulent strains.
- **Statement 2: Incorrect**

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

Explanation:

- **Statement 1: Correct**
 - FRBM Act aimed at eliminating revenue deficit and reducing fiscal deficit, ensuring macroeconomic stability.
- **Statement 2: Incorrect**
 - States are required to enact their own fiscal responsibility laws, aligned with FRBM principles.
- **Statement 3: Correct**
 - The 2018 Amendment introduced a combined debt target of 60% of GDP:
 - 40% for Centre, 20% for States.
 - Pathogen spillover usually leads to a decline in biodiversity, not enhancement. Wild pollinators often lack immunity to introduced pathogens.
- **Statement 4: Incorrect**
 - Pathogen spillback increases disease severity in managed bees; it does not eradicate infections.

◆ Hence, all statements are incorrect.

15) **Correct Answer: (b) 1, 3, and 4 only**

Explanation:

- **Statement 1: Correct**
 - IEEH is the successor to the International Partnership for Energy Efficiency Cooperation (IPEEC).
- **Statement 2: Incorrect**
 - The IEEH does not focus exclusively on financing for developing countries. It promotes knowledge-sharing, innovation, and policy dialogues.
- **Statement 3: Correct**
 - India's participation is through the Bureau of Energy Efficiency (BEE).
- **Statement 4: Correct**
 - IEEH aligns with India's national energy efficiency programs, such as PAT, UJALA, and ECBC.

16) **Correct Answer: (d) Mid-flight manoeuvrability**

Explanation:

- **Hypersonic missiles** travel at speeds exceeding **Mach 5** (5 times the speed of sound).
- Their **mid-flight manoeuvrability** enables **unpredictable trajectories**, making them extremely hard to track and intercept.
- Traditional intercept systems **fail to respond in time** to these rapid changes in direction.

17) **Correct Answer: (c) Only three**

Explanation:

- **Statement 1: Incorrect**
 - The Oriental Pied Hornbill is not the largest; the Great Hornbill is the largest in Asia.
- **Statement 2: Correct**
 - It is highly adaptable, found in forests, plantations, and near human habitations.
- **Statement 3: Correct**
 - It acts as a 'forest engineer', helping in seed dispersal over long distances.
- **Statement 4: Correct**
 - It prefers subtropical and tropical moist lowland forests, but can live in secondary forests too.

18) **Correct Answer: (a) Only one**

Explanation:

- **Statement 1: Incorrect**

- Under Article 292, the Union cannot borrow **without restriction**; borrowing must be backed by **parliamentary approval** and **secured** against the **Consolidated Fund of India**.
- **Statement 2: Correct**
 - Under Article 293(3), a state **must seek Centre's consent** to borrow if it owes loans to the Union.
- **Statement 3: Correct**
 - Borrowing by both Union and States is **regulated by laws** enacted under **Articles 292 and 293**, respectively.

19) Correct Answer: (a) 3 only

Explanation:

- **Statement 1: Incorrect**
 - Under the **Wildlife Protection Act, 1972 (Section 38V)**, the **state government** is the **notifying authority**, not the **NTCA**.
- **Statement 2: Incorrect**
 - **Core zones** are **strictly protected**. **Human habitation is prohibited**; sustainable activities are only allowed in **buffer zones**.
- **Statement 3: Correct**
 - **State governments** submit proposals to **NTCA**, which evaluates and approves the plan.

20) Correct Answer: (c) 2 only

Explanation:

- **Statement 1: Incorrect**
 - WADA is **jointly funded** by the IOC and **national governments**, with **equal contributions** from both.
- **Statement 2: Correct**
 - The **World Anti-Doping Code** is the **unified global standard**, followed by all national and international federations.
- **Statement 3: Incorrect**
 - WADA does not conduct tests directly; it focuses on **policy, compliance, education, and capacity building**.

21) Correct Answer: (a) Only one

Explanation:

- **Statement 1: Correct**
 - TIG was **constituted in 2021** under the Department of Telecommunications to create a **6G roadmap**, covering areas from **R&D to commercialization**.
- **Statement 2: Correct**
 - It has **specific task forces** for **spectrum management, international standards, devices, and funding mechanisms**.
- **Statement 3: Incorrect**
 - TIG aims to establish **global leadership** in 6G, with a focus on **international collaboration**, not just domestic rollout.

◆ Only **one statement is incorrect**, hence **option (a)** is correct.

22) Correct Answer: (b) Only two

Explanation:

- **Statement 1: Correct**
 - The **Earth acts as a ground** due to its **low electric potential**, enabling safe discharge of lightning.
- **Statement 2: Correct**
 - Lightning rods **ionize surrounding air, reducing resistance**, and creating a **conductive path** for the electrical discharge.
- **Statement 3: Incorrect**
 - Franklin rods use **passive ionization**, while **Early Streamer Emission (ESE)** rods actively emit upward

streamers—**they do not operate on the same principle**.

23) Correct Answer: (b) Only two

Explanation:

- **Statement 1: Correct**
 - It's a **collaborative platform** of India's **industry, academia, R&D institutes**, and startups to **develop 6G capabilities**.
- **Statement 2: Correct**
 - Supports development of **6G tech**, while also **enhancing India's 5G ecosystem**, including patent generation and indigenous R&D.
- **Statement 3: Incorrect**
 - Bharat 6G Alliance is **not isolated**; it aligns with **global groups** like the **Next G Alliance (USA)** and **6G Flagship (Finland)** to contribute to **international standardization**.

24) Correct Answer: (d) 1, 2, 3 and 4

Explanation:

- **Statement 1: Correct**
 - Launched in **2017** by the **Ministry of Health and Family Welfare**.
- **Statement 2: Correct**
 - Strengthens **AMR surveillance** and **R&D capacity**, including lab networks and data collection.
- **Statement 3: Correct**
 - Uses a **One Health approach**, covering **human, animal, and environmental health sectors**.
- **Statement 4: Correct**
 - Advocates for **reduced antibiotic use in livestock**, aligned with **FAO-OIE-WHO standards**.

25) Correct Answer: (c) Profitability ratios

Explanation:

- D-SIBs are identified by **RBI** based on systemic importance, using criteria like:
 - **Size relative to GDP**
 - **Interconnectedness within financial system**
 - **Cross-jurisdictional activity**
 - **Substitutability and complexity**
- **Profitability ratios** (e.g., ROA, ROE) reflect **financial performance**, not **systemic risk**, and hence **are not a criterion**.

26) Correct Answer: (c) The Governor of the State, the Central Government, or the UT Administrator

Explanation:

- As per **Section 3 of AFSPA**, the **Governor, Central Government, or UT Administrator** can declare an area as "**disturbed**".
- The declaration allows **armed forces special powers** under AFSPA for maintaining public order.

27) Correct Answer: (d) Hard corals have limestone skeletons, while soft corals do not

Explanation:

- **Hard Corals (Scleractinians):**
 - Have **calcium carbonate skeletons**, form **coral reefs**.
 - Host **zooxanthellae algae**.
- **Soft Corals:**
 - Do **not have rigid skeletons**, appear flexible (fan or tree-like).
 - Are **non-reef-building**, but may still contain **zooxanthellae**.

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

Explanation:

- Statement 1: Incorrect
 - The AMRSN (ICMR) focuses primarily on **human AMR surveillance**; veterinary integration is limited.
- Statement 2: Correct
 - The **National One Health Mission**, launched in 2022, integrates efforts across **human, animal, and environmental health**.
- Statement 3: Correct
 - NCDC has released national **infection control and antibiotic use guidelines**, improving **hospital-level AMR stewardship**.

29) Correct Answer: (b) Only two

Explanation:

- Statement 1: Correct
 - Prior sanction** of the **Union Government** is required before prosecuting armed forces personnel for acts under AFSPA.
- Statement 2: Incorrect
 - Immunity only covers acts **performed under AFSPA**. **Personal or unrelated crimes** are **not protected**.
- Statement 3: Incorrect
 - Judicial review is permitted**, especially if **fundamental rights** are involved. Courts have intervened in various cases.
- Statement 4: Correct
 - Civilian complaints** need **Union sanction** to proceed legally against armed forces under AFSPA.

30) Correct Answer: (b) Only two

Explanation:

- Statement 1: Incorrect
 - Coral reefs are **mostly found in tropical regions**, but **deep-sea corals** also exist in **cold waters** (e.g., Norway, Antarctica).
- Statement 2: Incorrect
 - Corals depend on **zooxanthellae** for up to 90% of their **energy**. Without them, survival is not **sustainable** long-term.
- Statement 3: Correct
 - Coral bleaching** occurs when **zooxanthellae** are **expelled** due to **stressors** like **rising temperatures**, leading to **energy loss** and potential death.

31) Correct Answer: (b) 2 only

Explanation:

- Statement 1: Incorrect
 - The ICZM project in India is **funded by the World Bank**, not by the **Global Environment Facility (GEF)** or the **United Nations**.
 - It is coordinated by the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- Statement 2: Correct
 - ICZM involves **scientific mapping of coastal erosion, biodiversity, marine pollution, and hazard risk zones**.
 - Aims for **sustainable management of coastal ecosystems and livelihood security**.

32) Correct Answer: (a) 1970 UNESCO Convention

Explanation:

- This Convention addresses the **illicit import, export, and transfer of cultural property**.
- India ratified it in **1980**, forming the basis for international legal and diplomatic efforts to **reclaim stolen artifacts**.

- Other options:
 - Vienna Convention (1961)**: Relates to **diplomatic relations**, not cultural heritage.
 - CBD (1992)**: Deals with **biological diversity**, not artifacts.
 - Hague Convention (1954)**: Applicable during **armed conflict**, not peacetime heritage repatriation.

33) Correct Answer: (b) Only two

Explanation:

- Statement 1: Incorrect
 - Silvaguard** does not use **underwater drones**. It's a **terrestrial and aerial system** using **drones, sensors, and thermal cameras**.
- Statement 2: Correct
 - Operates **autonomously**, detecting **early-stage wildfires** before satellites can.
- Statement 3: Correct
 - Integrated with **Silvanet**, an **IoT-based sensor network** for real-time forest fire monitoring.

34) Correct Answer: (d) Third-generation fire-and-forget anti-tank missile integrated on a tracked vehicle

Explanation:

- Nag Missile** is developed by **DRDO**, has **fire-and-forget capability**, and is designed to **destroy tanks with ERA**.
- Integrated on **NAMICA (Nag Missile Carrier)** – a **tracked, amphibious vehicle**.
- Uses **Imaging Infrared (IIR)** seeker for precise targeting.

35) Correct Answer: (c) Statement-I is correct but Statement-II is incorrect

Explanation:

- Statement 1: Correct
 - Maasai are **ecologically integrated pastoralists**, known for **sustainable livestock herding** in **semi-arid savannas** of Kenya and Tanzania.
- Statement 2: Incorrect
 - They do not inhabit the **Horn of Africa**. Their territory spans the **Great Rift Valley** grasslands, **not deserts or salt flats**.

36) Correct Answer: (c) Validates tri-service jointness and multi-domain warfare in high-altitude environments

Explanation:

- Conducted in **Arunachal Pradesh**, this **tri-service drill** involved:
 - Drones, UAVs, fighter aircraft, and space-based ISR assets**.
- It emphasized **multi-domain operations** (land, air, space), not desert or ASEAN naval operations.

37) Correct Answer: (c) None

Explanation:

- Statement 1: Incorrect – Located in **Bhagalpur, Bihar**, not **Nepal**.
- Statement 2: Incorrect – Declined after **Bakhtiyar Khilji's invasion** (12th century), **before Mughal era**.
- Statement 3: Incorrect – **Sanskrit**, not **Pali**, was the primary medium, especially for **Mahayana and Vajrayana Buddhism**.

38) Correct Answer: (d) Statement-I is incorrect but Statement-II is correct

Explanation:

- Statement 1: Incorrect – Blue Economy does **not advocate maximum exploitation**. It emphasizes **sustainability and inclusive growth**.

- **Statement 2: Correct** – The core of Blue Economy Vision 2030 is **ecological sustainability**, aligned with **SDG-14**.

39) Correct Answer: (a) Only one
Explanation:

- **Statement 1: Correct** – Founded by King Dharmapala of the Pala Dynasty.
- **Statement 2: Incorrect** – Became prominent in the Pala period, not Gupta era.
- **Statement 3: Incorrect** – Known primarily from **Tibetan sources**, especially **Tāranātha**, not Arab or Persian travelers.

40) Correct Answer: (b) Only two
Explanation:

- **Statement 1: Incorrect** – IFAW does **not work only in UNEP-declared parks**. It operates in diverse landscapes including **community areas and disaster zones**.
- **Statement 2: Correct** – Promotes **coexistence strategies**, e.g., **wildlife corridors and conflict mitigation**.
- **Statement 3: Correct** – Works on **legal reform, anti-trafficking, and animal rescue**, aligned with **CITES** and **domestic laws**.

41) Correct Answer: (d) A-3, B-2, C-1
Explanation:

- **A. Xenotransplantation – 3**
 - **Definition:** Transplantation of **living cells, tissues, or organs** from one species to another (e.g., **pig to human**).
 - **Relevance:** Aims to address **organ donor shortages**, though raises ethical and health concerns (e.g., zoonosis, rejection).
- **B. Auxiliary Transplant – 2**
 - Partial organ (often **liver**) is transplanted to provide **functional support**, without removing the native organ.
 - Used in cases of **potential organ recovery**.
- **C. CRISPR – 1**
 - **Clustered Regularly Interspaced Short Palindromic Repeats:** A precise gene-editing tool.
 - Used to **edit animal DNA** for xenotransplant compatibility.

42) Correct Answer: (b) A-2, B-1, C-4, D-3
Explanation:

- **Operation Brahma** – Myanmar Earthquake (2025)
- **Operation Maitri** – Nepal Earthquake (2015)
- **Operation Dost** – Turkey-Syria Earthquake (2023)
- **Operation Sahayata** – Sri Lanka Flood & Cyclone Relief

◆ Highlights India's growing role in **Humanitarian Assistance and Disaster Relief (HADR)** diplomacy, under "Neighbourhood First" and "Act East" policies.

43) Correct Answer: (a) Only one
Explanation:

- **Statement 1: Incorrect**
 - **IMD criteria:** $\geq 40^{\circ}\text{C}$ in plains ($\geq 30^{\circ}\text{C}$ hills), and $\geq 4.5^{\circ}\text{C}$ above normal. 45°C is not the sole threshold.
- **Statement 2: Incorrect**
 - **Wet Bulb Globe Temperature (WBGT)** considers **temperature + humidity + wind speed + radiation**. Essential for assessing **heat stress**.
- **Statement 3: Correct**
 - Heatwaves disproportionately affect **urban informal workers, elderly, and low-income groups**.
 - Events like **Ahmedabad 2010** and **Odisha 1998** show high mortality in these populations.

44) Correct Answer: (b) 2 and 3 only
Explanation:

- **Statement 1: Incorrect**
 - BHS can be any **ecologically/culturally important site**, not just national parks or sanctuaries.
- **Statement 2: Correct**
 - **Panchayats and Biodiversity Management Committees (BMCs)** can propose BHS under **Section 37 of the Biological Diversity Act, 2002**.
- **Statement 3: Correct**
 - Sites with **endemic/threatened species or cultural significance** (e.g., **sacred groves**) are eligible.

45) Correct Answer: (a) 1 only
Explanation:

- **Statement 1: Correct**
 - Myanmar shares a **maritime boundary with India** in the **Andaman Sea** (strategically important in Indo-Pacific context).
- **Statement 2: Incorrect**
 - **China**, not Thailand, shares the **longest land border** with Myanmar (over 2,000 km).

46) Correct Answer: (b) 2 only
Explanation:

- **Statement 1: Incorrect**
 - **Judiciary is not excluded** from RTI. SC rulings (2010, 2019) affirmed that **CJI's office is a public authority**.
- **Statement 2: Correct**
 - The **Judicial Standards and Accountability Bill (2010)** proposed **mandatory public disclosure of judges' assets**, but it lapsed.

47) Correct Answer: (d) None
Explanation:

- **Statement 1: Incorrect**
 - Heatwaves are **classified as serious hazards** in NDMA's disaster plan after events like **2015 heatwave**.
- **Statement 2: Incorrect**
 - **35°C wet bulb temperature** is the **survivability threshold**. Below 30°C is not fatal under normal conditions.
- **Statement 3: Incorrect**
 - India lacks a **uniform Heat Action Plan**. States like **Gujarat, Odisha** have their own, but national uniformity is absent.

48) Correct Answer: (c) Tamil Nadu's second BHS under Biological Diversity Act, 2002
Explanation:

- **Kasampatty Sacred Grove** is Tamil Nadu's **second BHS**, after **Aritappatti**.
- Recognized for:
 - **Pollinator corridors, microclimate regulation, and cultural worship** of deity Veeranan.
- Declared under **Section 37 of the Biological Diversity Act** through **community participation**.

49) Correct Answer: (c) Active strike-slip fault from Indian-Eurasian plate interaction
Explanation:

- Myanmar lies on the **Sagaing Fault**, a **strike-slip fault** between the **Indian and Eurasian plates**.
- Responsible for major quakes in **Mandalay, Nay Pyi Taw**, etc.
- Other options:
 - **Option a:** Myanmar ≠ stable shield.
 - **Option b:** Incorrect plate junction.

o **Option d:** Not a volcanic zone.

50) **Correct Answer: (a) Only one**
Explanation:

- **Statement 1: Incorrect**
 - o BHS are governed by the **Biological Diversity Act**, not the **Forest Rights Act (FRA)**.
- **Statement 2: Incorrect**
 - o **Spiritual value** (e.g., sacred groves) **is sufficient**, if it also contributes to **ecological balance**.
- **Statement 3: Correct**
 - o **State Biodiversity Boards (SBBs)** are central to BHS declaration and management processes.



IQRA

Wisdom leads to success