

General Studies

Current Affair Test (September-2025)

1. Solution: D

Keoladeo National Park, also known as Bharatpur Bird Sanctuary, is located in Bharatpur, Rajasthan, and is recognized as a UNESCO World Heritage Site due to its rich biodiversity and significance as a bird habitat, making Statement 1 correct.

Statement 2 is incorrect because Keoladeo National Park, along with Chilika Lake, was declared India's first Ramsar Site in 1981, not Vembanad Lake. Vembanad Lake in Kerala is also a Ramsar site but was not among the first designated ones.

Statement 3 is correct, as the Gambhir and Banganga rivers provide essential water sources that support the wetland ecosystem of the park, making it an important breeding ground for migratory birds, including the rare Siberian crane.

2. Solution: A

Agricultural biotechnology applies genetic engineering, CRISPR technology, and selective breeding to improve crop yield, pest resistance, and environmental adaptation (statements 1, 2, and 3 are correct).

However, it is not exclusively used for increasing shelf life (statement 4 is incorrect), though techniques like RNA interference have extended the freshness of some produce.

What is Biotechnology?

Biotechnology involves using biological systems, organisms, or derivatives to develop new technologies and products.

It enhances healthcare, agriculture, industrial processes, and environmental sustainability.

Types of Biotechnology:

Medical Biotechnology: Develops vaccines, gene therapy, and regenerative medicine.

Agricultural Biotechnology: Improves crop yields, pest resistance, and soil health.

Industrial Biotechnology: Creates biofuels, biodegradable plastics, and bio-based chemicals.

Environmental Biotechnology: Focuses on waste management, pollution control, and bioremediation.

3. Solution: A

Statements 1 and 2 are correct because revenue expenditure includes salaries, pensions, and subsidies, and it does not create productive assets.

Statement 3 is correct, as India has been shifting

focus towards capital expenditure for better economic outcomes.

Statement 4 is incorrect because capital investments are part of capital expenditure, not revenue expenditure.

What is Socio-Economic Expenditure?

Socio-economic expenditure refers to government spending aimed at improving social and economic outcomes, such as education, healthcare, infrastructure, and welfare schemes. It includes:

Capital Expenditure (Capex): Investments in infrastructure like roads, railways, and ports.

Revenue Expenditure: Day-to-day spending on salaries, subsidies, and welfare programs.

Development Expenditure: Long-term investments in education, healthcare, and R&D.

Interest Payments: Costs incurred due to past borrowings.

Subsidies: Financial support for essential goods and services like food and fuel.

Data and Trends in India's Socio-Economic Expenditure:

Capital Outlay to GDP Ratio: Increased from 1.5% in 2000 to 2.5% in 2023, reflecting higher infrastructure spending.

Revenue Expenditure to Capital Outlay Ratio: Declined from 8:1 in 2000 to 5:1 in 2023, indicating better spending quality.

Development Expenditure to GDP Ratio: Rose from 6% in 2000 to 8% in 2023, driven by investments in health and education.

Interest Payments to Total Expenditure Ratio: Fell from 25% in 2000 to 20% in 2023 due to fiscal consolidation.

State-Level Spending: States' development expenditure increased post-14th Finance Commission recommendations, with higher fiscal devolution.

4. Solution: C

Industrial biotechnology is used for pharmaceutical production but also extends to biofuels, biodegradable plastics, enzyme production, and sustainable materials. It plays a vital role in environmental sustainability by reducing industrial waste and developing eco-friendly alternatives.

5. Solution: B

Statement 3 is correct because high interest payments

reduce the government's ability to allocate funds for development projects.

Statement 1 is incorrect because interest payments form a significant part (around 20%) of India's total expenditure.

Statement 2 is incorrect, as India's fiscal deficit has been managed better in recent years.

6. Solution: B

Rupee-Dollar Swap Auctions are a tool used by the Reserve Bank of India (RBI) to manage liquidity in the banking system by exchanging rupees for dollars or vice versa.

Statement 1 is incorrect because swap auctions do not eliminate the need for other monetary policy tools like repo rate adjustments or open market operations (OMOs). They are used as a complementary measure to influence liquidity conditions rather than replacing existing tools.

Statement 2 is correct as swap auctions can inject rupee liquidity when banks sell USD to the RBI in exchange for rupees. This increases the availability of rupees in the financial system, addressing liquidity shortages.

Statement 3 is incorrect because swap auctions are not limited to short-term liquidity management. They can be structured for both short-term and long-term purposes, depending on the central bank's objectives.

7. Solution: D

Socio-economic expenditure in an economy is classified into different types based on its purpose and impact.

Capital Expenditure (A-2) refers to spending on long-term assets like infrastructure, machinery, and buildings that enhance economic productivity over time. It is not consumed immediately but generates future benefits.

Revenue Expenditure (B-1) includes day-to-day operational costs such as salaries, subsidies, and administrative expenses, which do not create long-term assets but are essential for maintaining government functions.

Development Expenditure (C-4) is directed towards sectors like health, education, and research & development, aiming to improve human capital and overall socio-economic conditions.

Interest Payments (D-3) are the costs incurred by the government on borrowed funds, which include repayments on loans and debts.

8. Solution: C

The Lokpal is an anti-corruption ombudsman established to investigate corruption cases against public officials in India. It has various powers and

functions to ensure accountability in governance.

Statement 1 is correct because Lokpal can order prosecution of public servants based on its investigations. It does not need prior approval from any other authority to proceed with prosecution.

Statement 2 is correct as Lokpal has the authority to attach and confiscate assets that have been acquired through corrupt practices, ensuring that illicit wealth is recovered.

Statement 3 is incorrect because the Central Bureau of Investigation (CBI) does not function directly under Lokpal. However, Lokpal can direct the CBI to investigate corruption cases and monitor their progress.

Statement 4 is correct since Lokpal has the power to recommend disciplinary action against government officials found guilty of corruption.

9. Solution: C

Dollar-Rupee Swap Auctions are a tool used by the Reserve Bank of India (RBI) to manage liquidity and stabilize the foreign exchange market. These swaps involve the exchange of U.S. dollars and Indian rupees between the RBI and authorized market participants for a specified period, with a commitment to reverse the transaction at a future date.

Statement 1 is incorrect because the RBI does not always purchase dollars; it can either buy or sell dollars depending on its objective—buying dollars injects rupees into the system, while selling dollars absorbs excess rupee liquidity.

Statement 2 is incorrect as swap transactions are temporary in nature and do not lead to a permanent alteration in money supply.

Statement 3 is incorrect because the exchange rate in swap auctions is determined through bidding in the auction process, not by a fixed rate set by the RBI.

10. Solution: B

Statement 1 is correct as a DDoS attack involves overwhelming a server with traffic from multiple sources, making it challenging for legitimate users to access the service.

Statement 2 is incorrect because DDoS attacks are harder, not easier, to counter compared to traditional DoS attacks due to the multiple sources involved, often using botnets or spoofed IP addresses.

Statement 3 is correct as DDoS attacks can indeed result in slow loading times or complete inaccessibility of online services.

11. Solution: A

Only statement 3 is correct. India has moved towards aligning its taxation policy with the global consensus developed by the OECD, leading to the phased

withdrawal of its unilateral Equalisation Levy.

Statement 1 is incorrect; DSTs are not a corporate income tax on profits. Instead, they are a tax on gross revenues generated from specific digital services within a country.

Statement 2 is also incorrect. DSTs are destination-based taxes, meaning the tax liability is tied to the location of the users or consumers who generate the revenue, not the company's headquarters. This principle is precisely why they were introduced—to tax economic activity that occurs in a country even if the company has no physical presence there.

12. Solution: A

Only statement 3 is correct.

A primary and crucial function of the NDA is to serve as the gatekeeper for carbon market projects, ensuring they meet national criteria and authorizing them to generate carbon credits (Emission Reduction Units) that can be traded internationally under the mechanisms of the Paris Agreement.

Statement 1 is incorrect because the establishment of an NDA is not discretionary; it is a mandatory statutory requirement for any country wishing to participate in the international carbon markets under Article 6 of the Paris Agreement.

Statement 2 is incorrect because the 21-member committee is chaired by the Environment Secretary, not the Union Minister.

13. Solution: A

Only statement 1 is correct. The core of the geopolitical tension in the East China Sea is the dispute over the extent of the Exclusive Economic Zones (EEZ) and the continental shelf, which are believed to hold significant hydrocarbon reserves.

Statements 2 and 3 are incorrect. Japan advocates for the median line principle, which draws a boundary equidistant from the coastlines of the two countries. In contrast, China argues for the continental shelf principle, claiming that its EEZ extends to the natural prolongation of its continental shelf, up to the Okinawa Trough.

Statement 4 is incorrect because the Senkaku/Diaoyu Islands are administered by Japan, not China, though they are claimed by both China and Taiwan. This administrative control is a key point of contention.

14. Solution: B

Statement 1 is correct; brown dwarfs occupy the mass range between gas giants and the lowest-mass stars, and their core temperature and pressure are insufficient to trigger sustained hydrogen fusion, hence the term “failed stars.”

Statement 2 is also correct; red dwarfs are small, cool,

and faint stars, but they are incredibly numerous and burn their fuel so slowly that their lifespans can extend to trillions of years, far longer than the current age of the universe.

Statement 3 is incorrect. While brown dwarfs are roughly the size of Jupiter, red dwarfs are significantly larger. A typical red dwarf, though small for a star, is still many times the size of Jupiter.

15. Solution: C

The central purpose and significance of Article 6 of the Paris Agreement is to establish rules for international cooperation through carbon markets. It allows countries that overachieve their climate targets (Nationally Determined Contributions or NDCs) to sell their excess emission reductions to countries that are struggling to meet their own goals. This creates a market-based mechanism to lower the overall global cost of mitigation and encourage more ambitious climate action.

Option (a) is incorrect as carbon taxes are a domestic policy choice, not a mandate under Article 6.

Option (b) relates more to other climate finance mechanisms like the Green Climate Fund.

Option (d) is incorrect as Article 6 does not set specific neutrality deadlines; these are set by individual countries in their NDCs.

Q16. Solution: D

Statement 1 is incorrect. The East China Sea is a marginal sea of the Western Pacific Ocean, not the Indian Ocean.

Statement 2 is incorrect. It is connected to the South China Sea via the Taiwan Strait. The Korea Strait connects it to the Yellow Sea and the Sea of Japan to the north.

Statement 3 is incorrect. The East China Sea is known for being generally shallow, as it is situated over a continental shelf. Its average depth is around 350 meters, not 2000 meters.

17. Solution: C

The fundamental principle behind DSTs is to address the tax challenges of digitalization. Traditional tax rules are based on physical presence (a ‘permanent establishment’). Digital giants, however, can earn enormous revenues from a country's users without having a significant physical presence there. DSTs are designed to capture the value created by local user engagement, data, and participation, which contributes to the profits of these digital platforms. Option (c) perfectly encapsulates this ‘value creation’ principle.

18. Solution: D

Statement 2 (Correct): A core protection function of the UNHCR is to ensure that states adhere to the principle of non-refoulement. This fundamental

principle of international refugee law prohibits countries from returning refugees or asylum seekers to a territory where they would be at risk of persecution.

Statement 4 (Correct): The UNHCR has a specific mandate to lead international efforts to prevent and reduce statelessness and to protect stateless persons. This involves working with governments to reform nationality laws and assist individuals in acquiring citizenship.

Statement 1 (Incorrect): Prosecuting individuals for war crimes is the mandate of international judicial bodies like the International Criminal Court (ICC) or other ad-hoc tribunals, not the UNHCR. The UNHCR is a humanitarian and protection agency.

Statement 3 (Incorrect): Providing long-term development loans is the function of international financial institutions like the World Bank or regional development banks. While the UNHCR engages in humanitarian assistance, it does not operate as a development finance institution.

19. Solution: B

The most significant difference in the security of tenure between the Chief Election Commissioner (CEC) and other Election Commissioners (ECs) lies in their respective removal procedures.

Option (b) is correct because it accurately describes this difference. The CEC enjoys a high degree of protection, as they can only be removed from office in the same manner and on the same grounds as a judge of the Supreme Court. This involves a rigorous process of impeachment by Parliament. In contrast, Election Commissioners can be removed by the President based on the recommendation of the CEC. This distinction clearly places the CEC in a more secure position, making them the institutional head whose recommendation is necessary to remove colleagues.

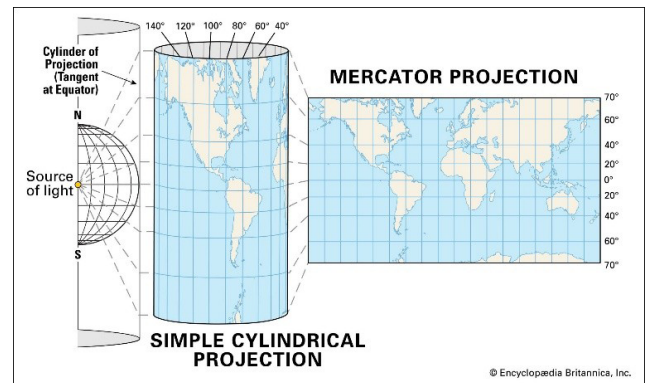
20. Solution: B

Statement 1 is incorrect. A conformal projection, like the Mercator, preserves local shapes and angles, not area. The primary trade-off is that it grossly distorts the size (area) of landmasses, especially at higher latitudes. For example, Greenland appears as large as Africa, which is factually incorrect.

Statement 2 is correct. This is the defining feature and the original purpose of the Mercator projection. A straight line on this map is a loxodrome or rhumb line, which represents a course of constant bearing. This allowed navigators in the Age of Exploration to plot a course with a simple compass direction.

Statement 3 is incorrect. To maintain conformality (preserving angles), the spacing between parallels of latitude must increase as one moves away from the Equator towards the poles. This stretching in the north-south direction is what causes the massive

area distortion of polar regions like Greenland and Antarctica.



21. Solution: B

Statement-I is correct. Tropical cyclones are essentially massive heat engines. They form over warm ocean waters. The warm, moist air rises, and as it cools, the water vapor condenses into clouds and rain, releasing enormous amounts of latent heat of condensation. This heat warms the surrounding air, causing it to rise further, which in turn leads to lower pressure at the surface and strengthens the storm.

Statement-II is also correct. Extra-tropical cyclones, also known as mid-latitude or synoptic cyclones, form in regions outside the tropics. Their primary energy source is baroclinic instability, which arises from the horizontal temperature gradient or contrast between cold and warm air masses that meet along fronts (like a cold front or a warm front).

While both statements are correct descriptions of their respective cyclone types, Statement-II describes a different weather system and does not explain the mechanism mentioned in Statement-I.

22. Solution: D

Option (a) is incorrect. The guidelines are focused on addressing a domestic gap in animal healthcare. There is no mention of exporting blood products; the primary goal is self-sufficiency and safety within India.

Option (b) is incorrect. While a regulated system might have economic aspects, the core principle is voluntary donation and a "Donor Rights Charter," which counters the idea of a purely commercial market. The main objective is healthcare, not commerce.

Option (c) is incorrect. Blood transfusions are a therapeutic, not a preventive, measure. They are required for specific conditions like trauma, anaemia, or surgical blood loss, not as a routine procedure for all animals. Mandating it would be medically unnecessary and impractical.

Option (d) is correct. Until now, transfusions were done in emergencies without standardised protocols. The new guidelines aim to create a national framework for scientific protocols covering donation, storage, blood typing, cross-matching, and transfusion to ensure the safety, biosafety, and welfare of animals. This is the

central and most pressing need the policy addresses.

23. Solution: C

Statement 1 is incorrect. While he was a key leader in the Kheda Satyagraha (1918), he earned the title 'Sardar' for his exceptional leadership during the Bardoli Satyagraha (1928). Although Mahatma Gandhi also played a role, it was the women of Bardoli who first addressed him as 'Sardar'.

Statement 2 is correct. Sardar Patel was the President of the Indian National Congress during its Karachi session in 1931. This session was historically significant as it endorsed the Gandhi-Irwin Pact and passed resolutions on Fundamental Rights and the National Economic Programme.

Statement 3 is correct. As India's first Home Minister, Sardar Patel was instrumental in establishing the All-India Services. He is often called the 'Patron Saint' of India's civil services for convincing the Constituent Assembly to create the Indian Administrative Service (IAS) and the Indian Police Service (IPS) to provide a strong, unified administrative framework for the newly independent nation.

Statement 4 is correct. In 2014, the Government of India declared his birth anniversary, October 31, as National Unity Day (Rashtriya Ekta Diwas) to honour his monumental contribution to the integration of India.

24. Solution: C

Statement 1 is incorrect. Oman shares land borders with Yemen to the southwest, Saudi Arabia to the west, and the United Arab Emirates to the northwest. It does not share a land border with Iran. It shares a maritime border with Iran across the Strait of Hormuz.

Statement 2 is correct. Oman is strategically located on the southeastern coast of the Arabian Peninsula. Its coastline stretches along the Arabian Sea in the south and east, and the Gulf of Oman in the northeast, which leads to the Persian Gulf.

Statement 3 is correct. The central interior of Oman is a vast gravel desert plain, which forms a part of the Rub' al-Khali (the Empty Quarter), one of the largest sand deserts in the world, primarily located in Saudi Arabia but extending into Oman, Yemen, and the UAE.

Statement 4 is correct. The southern region of Dhofar, with its capital Salalah, has a distinct climate from the rest of the country. It is directly influenced by

the Indian Ocean monsoon from June to September, a phenomenon locally known as the Khareef, which brings drizzle and transforms the arid landscape into a lush green zone.



25. Solution: D

Statement I is incorrect. The terms 'Hurricane', 'Typhoon', and 'Cyclone' refer to the same meteorological phenomenon—a tropical cyclone. The difference in name is based on geographical location, not intensity. Storms in the Atlantic and Northeast Pacific are called 'Hurricanes'; in the Northwest Pacific, they are 'Typhoons'; and in the South Pacific and Indian Ocean, they are 'Cyclones'.

Statement II is correct. To avoid confusion, tropical storms are given names from lists that are curated and maintained by regional specialized meteorological centers (RSMCs) and tropical cyclone warning centers (TCWCs) under the purview of the World Meteorological Organization (WMO). This systematic naming helps in disaster management and communication.

Statement III is correct. The 'eye' is a characteristic feature at the center of a strong, mature tropical cyclone. It is a region of sinking air, resulting in calm conditions, light winds, and often a lack of clouds or rain, starkly contrasting with the violent eyewall surrounding it.

26. Solution: B

Statement 1 is correct. Project 17A is notable for its use of integrated construction methodology, where hull blocks are pre-outfitted with machinery, pipes, and wiring before being assembled. This technique reduces construction time and is a significant advancement in Indian shipbuilding.

Statement 2 is correct. The frigates are equipped with a Combined Diesel or Gas (CODOG) propulsion system. This arrangement provides flexibility and fuel efficiency: the diesel engines are used for normal cruising speeds, while the powerful gas turbines can be engaged for high-speed operations, such as in combat scenarios.

Statement 3 is incorrect. The primary long-range air defence is provided by the Long-Range Surface-to-Air Missile (LRSAM) system, also known as Barak-8. The Barak-8 is a joint development between India's DRDO and Israel Aerospace Industries (IAI). The Akash missile system is a medium-range surface-to-air missile primarily used by the Indian Army and Air Force for land-based air defence.

27. Solution: A

Statement-I is correct. The sobriquet 'Iron Man of India' is popularly used to describe Sardar Patel. This title reflects his strong will, decisiveness, and unwavering resolve, particularly in matters of national unity and security.

Statement-II is also correct. As India's first Deputy Prime Minister and Home Minister, Sardar Patel was tasked with the monumental challenge of integrating the 562 princely states. He used a combination of diplomacy ('privy purses'), political persuasion, and decisive action (like the police action in Hyderabad) to achieve their accession to India, a feat critical for the country's territorial integrity.

Statement-II provides the primary historical justification for the title mentioned in Statement-I.

28. Solution: B

Statement 1 is correct. The guidelines encourage voluntary donation and include a 'Donor Rights Charter'. This is a significant step towards ensuring the ethical treatment and welfare of animals that are part of the donation program, preventing their exploitation.

Statement 2 is correct. The integration of the 'One Health' concept is explicitly mentioned as a feature. This approach recognizes the link between animal health, human health, and the environment. By implementing rigorous screening and biosafety protocols for blood transfusion, the guidelines aim to manage and prevent the transmission of zoonotic diseases (diseases that can spread from animals to humans).

Statement 3 is incorrect. While the guidelines call for the establishment of state-regulated veterinary blood banks, there is no mention of a mandate for setting one up in every district by a specific deadline of 2025. Such a target would be overly ambitious and is not stated in the policy's features. The focus is on creating a regulatory framework for such banks to be established.

29. Solution: A

Combination 1 (Super Garuda Shield – Indonesia and USA – Indo-Pacific Region): This is correctly matched. The exercise is jointly hosted by the Indonesian National Armed Forces and the U.S. Indo-Pacific Command (1-A). Its explicit aim is to enhance regional security, interoperability, and deterrence

amid rising tensions in the Indo-Pacific (A-X).

Combination 2 (Malabar – India and France – South China Sea): This is incorrectly matched. Malabar is an exercise involving the Quad nations (India, USA, Japan, Australia), not India and France (so B is wrong). While it has been conducted in various locations including the South China Sea, its host and core participant description is incorrect.

Combination 3 (Varuna – Quad Nations – Arabian Sea): This is incorrectly matched. Varuna is a bilateral naval exercise between India and France, not the Quad nations (so C is wrong). It is frequently held in the Arabian Sea (Z is plausible), but the core participants are wrongly listed.

30. Solution: A

Statement I is the main assertion. It states that the vulnerability is due to a lack of legal regulation.

Statement II provides a specific legal reason for this vulnerability. The Antiquities and Art Treasures Act, 1972, which is India's primary law to prevent smuggling of cultural heritage, defines "antiquity" as items that have been in existence for not less than one hundred years. This definition does not explicitly include natural heritage objects like fossils, creating a significant legal loophole. Thus, Statement II is correct and directly explains a major part of the legal vacuum mentioned in Statement I.

Statement III provides an administrative or infrastructural reason for the vulnerability. The absence of a national system of secure repositories or museums dedicated to fossils means that specimens, once discovered, are often improperly stored, left unprotected at excavation sites, or fall into the hands of private collectors and smugglers. This infrastructural gap also directly contributes to the vulnerability mentioned in Statement I.

31. Solution: B

Statement 1 is incorrect. The mission supports both 'greenfield' (new) and 'brownfield' (expansion of existing)

Statement 2 is correct. A critical component of creating a self-reliant semiconductor ecosystem is human capital. The mission explicitly includes a talent development program with the ambitious goal of training over 60,000 skilled professionals, addressing the need for a specialized workforce in design, manufacturing, and testing.

Statement 3 is correct. One of the recently approved projects under the ISM is the establishment of India's first commercial Silicon Carbide (SiC) compound semiconductor fab by SiCSem Pvt. Ltd. in Odisha. This is a significant step towards diversifying India's semiconductor capabilities beyond traditional silicon.

32. Solution: C

Human African Trypanosomiasis, also known as sleeping sickness, is a vector-borne disease. This means it is transmitted by an intermediate organism, in this case, the tsetse fly (*Glossina* species). The causative agent is not a bacterium or virus, but a protozoan parasite of the species *Trypanosoma brucei*.

The disease progresses in two stages. In the first stage, the parasites are in the bloodstream and lymphatic system. If left untreated, it enters the second, neurological stage by crossing the blood-brain barrier into the central nervous system, causing the characteristic sleep disturbances and other neurological symptoms. This second stage is invariably fatal without treatment.

The disease is primarily found in rural areas of sub-Saharan Africa where agriculture and fishing are common, not urban centers.

33. Solution: A

Statement I is incorrect. The NMBA follows a three-pronged approach. While supply reduction, led by the NCB, is one component, the primary focus of the Abhiyaan, which is driven by the Ministry of Social Justice & Empowerment (MoSJE), is on demand reduction. This includes awareness campaigns, prevention education, and community outreach. The third prong is treatment and rehabilitation, handled by the Health Department.

Statement II is correct. The Abhiyaan is not a generalized, nationwide campaign but employs a targeted strategy. It is implemented in 272 high-risk districts that were specifically identified based on data from national surveys on substance use and inputs from the Narcotics Control Bureau. This allows for focused and more effective utilization of resources.

Statement III is incorrect. A key feature of the NMBA is its emphasis on community-based implementation and mass mobilization. The program actively involves a wide range of stakeholders, including youth groups, women's organizations, and civil society partners like the Art of Living, Brahma Kumaris, and ISKCON, to enhance public awareness and outreach.

34. Solution: A

Statement 1 is correct. Rabies is classified by the WHO as a Neglected Tropical Disease (NTD). Despite its severity, it is 100% preventable if Post-Exposure Prophylaxis (PEP), which includes a course of rabies vaccine and, in some cases, Rabies Immunoglobulin (RIG), is administered promptly after exposure.

Statement 2 is incorrect. While bats and other mammals can carry and transmit rabies, the vast majority of human cases—approximately 99% globally—are caused by the bites or scratches of infected dogs. Dogs are the primary vector for human rabies transmission.

Statement 3 is incorrect. The incubation period for rabies is highly variable. While it can be as short as

a week, it commonly ranges from 1 to 3 months, and in rare cases, it can be even longer. The time it takes for symptoms to appear depends on factors like the location of the bite and the viral load.

Statement 4 is incorrect. Rabies is one of the deadliest infectious diseases. Once clinical symptoms (like hydrophobia or paralysis) appear, the disease is almost invariably fatal. The mortality rate is nearly 100%, and there is no effective treatment at this stage.

35. Solution: D

The term 'Mud Waves' refers to large, rhythmic sedimentary bedforms found on the ocean floor. A recent study discovered 117-million-year-old examples buried beneath the Atlantic seabed off the coast of Guinea-Bissau.

These structures were not formed by atmospheric or volcanic processes but were created by powerful, persistent bottom currents in the ocean. Specifically, they were formed during the Cretaceous period when dense, saline water from the young North Atlantic spilled into southern basins, triggering massive underwater sediment flows that were then shaped into these wave-like patterns by deep-water currents. These geological features provide valuable insights into historic ocean circulation and paleoclimates.

36. Solution: C

Statement 1 is incorrect. The IOAA is a premier global competition specifically for high-school students, not university students. Its aim is to encourage and challenge young talent in the fields of astronomy and astrophysics before they enter higher education.

Statement 2 is incorrect. While it is an international event, the 18th IOAA is being hosted by India, and its organization is a collaborative effort. It is being organized by prominent Indian institutions: the Homi Bhabha Centre for Science Education (HBCSE) and the Tata Institute of Fundamental Research (TIFR), in partnership with the Union Ministry of Education.

Statement 3 is incorrect. The IOAA is designed to be a comprehensive test of a student's abilities. It features a blend of both theory and practice. The competition includes not only written exams on theoretical knowledge but also tests data analysis skills and practical observational abilities, such as night-sky observations.

37. Solution: A

Statement I is incorrect. The primary goal of OBE is not to facilitate copying but to shift the focus from rote memorization to higher-order thinking skills. It is designed to assess a student's ability to apply knowledge, analyze information, and solve problems, using reference materials as a tool rather than a source for direct answers.

Statement II is correct. The introduction of OBE by

the CBSE is a deliberate step to align the assessment system with the principles of the National Education Policy (NEP) 2020. The NEP emphasizes moving away from rote learning and towards competency-based education, which prioritizes critical thinking, problem-solving, and the practical application of concepts—all of which are core to the philosophy of Open-Book Assessments.

Statement III is incorrect. While the ability to quickly reference materials is helpful, it is not the main skill being tested. The questions in an OBE are typically designed to be application-oriented, requiring students to interpret, connect, and synthesize information from their resources to construct an answer. Success depends more on deep conceptual clarity and analytical skills than on the simple ability to locate facts.

38. Solution: D

Statement-I is incorrect. The establishment of the Union Public Service Commission in 1950 under the Constitution of India was a continuation and constitutional strengthening of an existing system. The principle of merit-based recruitment through competitive examinations had been introduced much earlier. The Public Service Commission itself was first established in 1926. Therefore, 1950 did not mark the beginning of this system but rather its culmination into a constitutionally-mandated body for the independent Republic of India.

Statement-II is correct. The Macaulay Reforms, prompted by the Northcote-Trevelyan Report and enacted through the Charter Act of 1853, were a landmark in the history of Indian civil services. In 1854, these reforms formally ended the patronage-based nomination system of the East India Company and introduced an open competitive examination for recruitment into the Indian Civil Service (ICS), which was held for the first time in London in 1855. This laid the foundation for a meritocratic bureaucracy.

39. Solution: B

Statement 1 is correct. A primary strategic driver for the ISM is to enhance India's economic and national security by reducing its significant dependence on imported semiconductors. By fostering a domestic manufacturing ecosystem, the mission supports the goal of self-reliance under the Atmanirbhar Bharat

Statement 2 is correct. The mission recognizes that a robust ecosystem requires strong design capabilities. Therefore, it includes specific provisions for a Design Linked Incentive (DLI) scheme that provides financial assistance and infrastructure support to domestic startups, MSMEs, and academic institutions working on semiconductor chip design.

Statement 3 is incorrect. The mission actively encourages foreign investment and technology collaboration to build the ecosystem. For instance,

the approved projects include joint ventures and collaborations with international firms like Clas-SiC Wafer Fab Ltd. (UK) and APACT Co. Ltd. (South Korea), indicating that incentives are available to projects with foreign partnership.

40. Solution: B

The Revised Income Tax Bill, 2025, includes several key reforms.

Statement 1 is correct as the bill restores the Rs 80M deduction for inter-corporate dividends, a measure aimed at providing relief to corporations.

Statement 2 is also correct; the bill rationalizes property taxation by removing the concept of notional rent on vacant properties, which was a point of grievance for many taxpayers.

Statement 3 is incorrect. The bill actually removes the Alternate Minimum Tax on LLPs, providing relief to these entities. The bill's features are designed to simplify the tax regime and improve the ease of doing business.

41. Solution: C

French colonization in Africa had profound socio-political and economic consequences. Statement 1 is correct as the French administration often dismantled traditional African governance structures, replacing them with centralized colonial rule to ensure control.

Statement 2 is correct because the policy of assimilation promoted the French language, culture, and legal systems, suppressing indigenous identities.

Statement 4 is also correct, as France extensively extracted natural resources such as rubber, gold, and timber, often relying on forced labor under harsh conditions.

However, Statement 3 is incorrect since industrial development in African colonies was largely neglected. Instead of fostering local industries, France prioritized extracting raw materials and shipping them to metropolitan France for processing. Infrastructure, such as railways and ports, was built primarily to facilitate resource extraction rather than to develop independent industrial hubs.

42. Solution: D

ECBs under the Automatic Route are generally allowed for sectors that promote economic growth, such as defense manufacturing, power, and healthcare. Restricted sectors like gambling, lottery, and real estate (excluding affordable housing) are not eligible for ECBs.

43. Solution: C

Statement 1 (Incorrect): Bomb cyclones are extratropical systems, not tropical cyclones. They form in mid-latitudes, not near the equator.

Statement 2 (Incorrect): They do not weaken

immediately upon reaching the ocean. In fact, warm ocean surfaces enhance their strength.

Statement 3 (Incorrect): Bomb cyclones are defined by pressure changes, not wind speeds. They undergo bombogenesis when the central pressure drops rapidly.

44. Solution: A

Statement 1 (Incorrect): Lake Victoria is the second-largest freshwater lake by surface area, but it is not the second-largest by volume. That title belongs to Lake Tanganyika.

Statement 2 (Correct): The Kagera River is the longest river that drains into Lake Victoria and is one of the main sources of the White Nile.

Statement 3 (Incorrect): Lake Victoria's outflow contributes to the White Nile River, not the Congo River.

45. Solution: A

Only Statement 1 is correct.

The Satavahana dynasty played a crucial role in enhancing the Sanchi Stupa, one of the most significant Buddhist monuments in India. Their primary contribution was the construction of the elaborately carved toranas (gateways) around the Great Stupa, which served as decorative and symbolic entrances.

These gateways, built in the 1st century BCE, are known for their intricate carvings depicting various scenes from the Jataka Tales—stories of the previous lives of the Buddha—rather than military conquests or battles.

The Satavahanas were patrons of Buddhism and supported its expansion, but they did not construct new stupas at Sanchi. Instead, they focused on embellishing existing structures. The toranas reflect a strong artistic tradition and demonstrate the dynasty's commitment to Buddhist ideology.

Their contribution helped transform the Sanchi Stupa into an architectural masterpiece, influencing Buddhist art across India and beyond.

46. Solution: C

Rajendra I, one of the greatest rulers of the Chola dynasty, was known for his extensive naval expeditions, particularly against the Srivijaya Empire in Southeast Asia. The Andaman Islands served as a crucial strategic base for these maritime campaigns.

Given their location in the Bay of Bengal, the islands provided a staging point for Chola naval forces to refuel, regroup, and launch attacks against distant territories, including the Srivijaya-controlled regions in present-day Indonesia and Malaysia. This expedition, undertaken around 1025 CE, demonstrated the Cholas' maritime supremacy and their ability to project power far beyond the Indian subcontinent.

The successful campaign weakened Srivijaya's

control over important trade routes and increased Chola influence in the region.

The historical significance of this connection was later acknowledged when Port Blair was briefly renamed Sri Vijaya Puram, highlighting the legacy of Chola naval dominance.

47. Solution: C

Signal modulation involves adjusting wave properties—amplitude (AM), frequency (FM), or phase (PM)—to carry information.

AM (Amplitude Modulation) changes the wave height to encode signals, while FM (Frequency Modulation) alters the wave's frequency.

PM (Phase Modulation) shifts the wave's phase for clear digital transmissions like Wi-Fi, being less affected by interference.

FM offers better sound quality than AM, but its range is shorter.

However, as technology advances, digital broadcasting is replacing analog due to its efficiency and resistance to interference.

48. Solution: C

Khanij Bidesh India Limited (KABIL) is a joint venture formed by three public sector undertakings to secure overseas supply of critical minerals for India.

KABIL has been engaged with mineral-rich countries, and in 2024, it signed its first major agreement for lithium exploration and mining in Argentina.

This venture is part of India's broader strategy to ensure access to essential resources like lithium, which is crucial for battery manufacturing and the transition to renewable energy.

49. Solution: B

"PDS leakage" refers to the proportion of food grains, such as rice and wheat, released by the Food Corporation of India (FCI) that fail to reach consumers, usually due to inefficiencies or corruption in the distribution process. This issue was one of the major concerns addressed by the NFSA 2013, and reforms have significantly reduced leakages across many states.

50. Solution: B

Statement 1 is correct because food irradiation prevents spoilage by slowing down the process of decay and delaying ripening, sprouting, or germination.

Statement 3 is also correct, as irradiation reduces the need for chemical preservatives, promoting a more sustainable food supply chain.

Statement 2 is incorrect because irradiation typically requires just one exposure treatment to achieve the desired food safety effects, simplifying food safety practices.

Statement 4 is also correct, as the Codex Alimentarius Commission established global standards for food irradiation.

51. Solution: C

Statement 1 is incorrect as the Global Artificial Intelligence (AI) City Index 2025 is published by the market research firm Counterpoint Research, not the World Economic Forum.

Statement 2 is correct; Bengaluru secured the 26th rank, making it the only Indian city in the top 30 and highlighting its position as a leading hub for AI research and development and data centers in the country.

Statement 3 is also correct as the index's objective is to identify and rank leading global urban centers by evaluating their capabilities across various parameters, including R&D ecosystems, investment inflows, public-private partnerships, and the application of AI in different sectors.

52. Solution: B

Statement 1 is incorrect as the festival was hosted in New Delhi, India, at Bharat Mandapam.

Statement 2 is correct; the theme was indeed "SaptaSur: Seven Nations, One Melody", which aptly captures the spirit of unity in diversity among the seven BIMSTEC nations.

Statement 3 is incorrect because the festival was organized by the Indian Council for Cultural Relations (ICCR) under the Ministry of External Affairs, not the Ministry of Culture.

Statement 4 is correct; the festival was an implementation of a commitment made by the Prime Minister of India at the BIMSTEC Summit in Thailand in April 2025.

53. Solution: D

The LEAP-1 (Launch, Experiment, Analyze, Progress) mission by Dhruva Space is a commercial satellite mission with specific technological and business objectives. Its primary goal is not a lunar mission, rural communication, or deep-space observation. Instead, it is focused on demonstrating cutting-edge capabilities like real-time geospatial AI processing in orbit.

This involves testing an AI/ML module that can analyze data directly in space. Additionally, the mission serves to showcase Dhruva Space's P-30 satellite platform as a viable and cost-effective option for carrying hosted payloads for international clients, thereby paving the way for future commercial ventures in the space sector.

54. Solution: A

Statement 1 is incorrect. The Asian Giant Tortoise (*Manouria emys*) is listed as 'Critically Endangered' on the IUCN Red List due to severe threats from habitat loss and hunting.

Statement 2 is correct. This species exhibits a unique reproductive behavior among tortoises; the female constructs a large nest mound from leaf litter and other forest debris and is known to guard it, which is a rare form of parental care in the tortoise world.

Statement 3 is incorrect. The Asian Giant Tortoise is listed under Schedule IV of the Wildlife Protection Act, 1972, not Schedule I. Schedule I provides the highest level of protection, which is not accorded to this species, although it is critically endangered globally.

55. Solution: C

Restitutionary damages are fundamentally restorative, not punitive. The key feature highlighted by the Supreme Court is their preventive and precautionary. Unlike fines that punish past violations, these damages can be imposed ex-ante (beforehand) based on the risk or likelihood of environmental harm. This aligns with the precautionary principle, a cornerstone of environmental jurisprudence.

The Supreme Court has empowered Pollution Control Boards to impose these damages under the Water and Air Acts, not just the National Green Tribunal.

They are not a tax but a direct financial liability on a potential polluter to fund the restoration or protection of the environment, based on the 'polluter pays' principle.

56. Solution: A

Statement I correctly identifies the naval exercise as an application of the 'Necklace of Diamonds' strategy. This exercise represents a practical step in building stronger maritime partnerships with key countries in the region.

Statement II accurately defines the 'Necklace of Diamonds' strategy as India's strategic initiative to enhance its maritime presence and partnerships in the Indo-Pacific to counterbalance China's growing influence, often referred to as the 'String of Pearls' strategy. The joint naval drill with the Philippines perfectly aligns with this strategic objective of fostering security cooperation with like-minded nations in China's maritime periphery.

57. Solution: A

Statement 1 is correct. The festival featured participation from artists from all seven BIMSTEC member nations: Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.

Statement 2 is incorrect. The festival's origin is traced back to a commitment made by the Indian Prime Minister at the April 2025 BIMSTEC Summit, not a specific anniversary.

Statement 3 is incorrect. The event was free and open to all, with no entry fee. The goal was to maximize public engagement and cultural outreach, not to generate revenue.

58. Solution: B

Statement I is correct. The key partners involved in the conservation project: the state's forest department and a specialized conservation organization, the ITCP.

Statement II is also correct. The reintroduction site is the Zeliang Community Reserve. This choice of location underscores the strategy of involving local communities in conservation, which is often crucial for the long-term success of such initiatives.

However, Statement II does not explain why the joint initiative was formed.

59. Solution: B

Statement 1 is incorrect. The South China Sea is a marginal sea of the western Pacific Ocean, not the Indian Ocean.

Statement 2 is correct. The Mekong River, along with others like the Pearl River and the Red River, drains into the South China Sea, contributing significant freshwater and sediment.

Statement 3 is correct. These nations, along with Taiwan and Indonesia, are the littoral states bordering the South China Sea and are involved in the complex territorial claims in the region.

Statement 4 is incorrect. The South China Sea is connected to the Indian Ocean via the Strait of Malacca, not the Strait of Hormuz. The Strait of Hormuz connects the Persian Gulf to the Arabian Sea.

60. Solution: D

The core principle of a fiat-collateralised stablecoin is to maintain price stability by pegging its value to a traditional fiat currency, such as the US dollar. To achieve this, the issuer holds reserves of the corresponding fiat currency or highly liquid, low-risk assets equivalent to the value of the stablecoins in circulation.

This reserve mechanism ensures that for every digital coin issued, there is a corresponding real-world asset held in custody.

This backing allows users to redeem their stablecoins for the underlying fiat currency, which instills confidence and maintains the 1:1 peg.

61. Solution: C

Statement (a) is incorrect. The Pradhan Mantri Ujjwala Yojana (PMUY) is a flagship scheme of the Ministry of Petroleum and Natural Gas (MoPNG).

Statement (b) is incorrect. The scheme provides deposit-free LPG connections, not entirely free connections, and it is targeted at women from economically weaker households, not all rural households. The primary objective is to make clean cooking fuel accessible to those who cannot afford the initial connection cost.

Statement (c) is correct. The identification of eligible

BPL families is done on the basis of Socio-Economic Caste Census (SECC) 2011. This ensures that the benefits of the scheme are targeted towards the most deserving households.

Statement (d) is incorrect. The scheme was launched in May 2016 in Ballia, Uttar Pradesh.

62. Solution: B

Statement 1 is incorrect. The Third Launch Pad (TLP) is designed specifically for next-generation rockets, such as the Next Generation Launch Vehicle (NGLV), not for the Polar Satellite Launch Vehicle (PSLV). The NGLV is envisioned to be a much larger and more powerful rocket.

Statement 2 is correct. A crucial objective of the TLP is to provide strategic redundancy. Currently, heavy-lift rockets like the LVM3 can only be launched from a single pad. The TLP will serve as a backup, preventing mission disruptions in case of any issues with the existing pad and ensuring continuity for critical missions like Gaganyaan.

Statement 3 is correct. The project incorporates a "Make in India" push, with significant involvement of private players and Micro, Small & Medium Enterprises (MSMEs) in the development of its infrastructure. This approach aims to boost the domestic space manufacturing ecosystem and enhance national capabilities.

63. Solution: B

Statement 1 is incorrect. The FFPI measures changes in international export prices, not domestic retail or wholesale prices. It serves as a global benchmark for food price trends.

Statement 2 is correct. The index is composed of the average of five commodity group price indices: cereals, vegetable oils, dairy, meat, and sugar.

Statement 3 is correct. The methodology was revised, and the index now uses average export shares from 2014–2016 as weights. This ensures the index accurately reflects the structure of the global food trade.

64. Solution: D

Statement 1 is incorrect. The Sea of Galilee is a freshwater lake, not saltwater, and it is located in northern Israel, though bordered by the Golan Heights to the east.

Statement 2 is incorrect. The red color was caused by a natural phenomenon: a bloom of the green algae *Botryococcus braunii*. This alga produces red carotenoid pigments as a protective response to high sunlight exposure, a condition exacerbated by climate change and rising temperatures, not industrial spills.

Statement 3 is incorrect. The Sea of Galilee is fed mainly by the Jordan River. The Yarmouk River is a

tributary that forms a boundary to the southeast of the lake.

65. Solution: A

Statement 1 is incorrect. S.H.I.N.E. (Science, Health and Innovation for Nextgen Explorers) is not a scholarship program but a nationwide science outreach programme. It focuses on engagement and inspiration rather than financial aid.

Statement 2 is incorrect. The initiative is organized by the Indian Council of Medical Research (ICMR) in collaboration with the Department of Health Research (DHR), not the Ministry of Education. The focus is specifically on health and medical science.

Statement 3 is correct. The primary aim of the S.H.I.N.E. initiative is to spark curiosity and inspire school students (grades 9-12) to consider careers in health and biomedical research. It achieves this through immersive experiences like lab tours, interactions with scientists, and demonstrations.

66. Solution: A

Statement-I is correct. The SASCI scheme for tourism exemplifies cooperative federalism, a governance model where the central and state governments work together in partnership.

Statement-II is also correct and provides the direct explanation for Statement-I.

The structure of the scheme defines the collaborative roles: the Centre's role is to provide financial assistance (as part of its 'Special Assistance to States for Capital Investment' initiative), while the States are given the autonomy and responsibility to lead the projects. This includes identifying iconic sites, preparing project proposals, and managing the implementation on the ground. This division of responsibility and partnership between the Centre and States is the very definition of cooperative federalism.

Therefore, Statement-II is the correct explanation for Statement-I.

67. Solution: C

Statement 1 is correct. Article 63 of the Constitution of India explicitly states, "There shall be a Vice-President of India."

Statement 2 is incorrect. Article 64 specifies that the Vice President shall be the ex-officio Chairman of the Council of States (Rajya Sabha), not the House of the People (Lok Sabha). The Lok Sabha is presided over by the Speaker.

Statement 3 is correct. Article 65 outlines the functions of the Vice President, including the provision that he or she shall act as President in the event of a casual vacancy in the office of the President by reason of death, resignation, or removal.

Statement 4 is correct. Article 67(c) contains a proviso

stating that the Vice President, notwithstanding the expiration of his term, shall continue to hold office until his successor enters upon his office. This ensures there is no gap in the office.

68. Solution: D

Statement-I is incorrect. The extension of President's Rule beyond one year requires one of two conditions to be met, not just a National Emergency. The two conditions laid down by the 44th Amendment Act are:

A proclamation of National Emergency is in operation in the whole of India or in the whole or any part of the state.

The Election Commission certifies that the continuation of the President's rule is necessary on account of difficulties in holding general elections to the legislative assembly of the state concerned.

Statement-II is correct. The 44th Amendment Act, 1978, was a significant piece of legislation aimed at reversing some of the distortions introduced by the 42nd Amendment. It introduced several safeguards to prevent the misuse of power by the executive, including the provisions related to the extension of President's Rule beyond one year. These provisions were specifically designed to curb the practice of extending central rule in states for political reasons by making it subject to stringent conditions, thereby strengthening the federal structure of the Constitution.

69. Solution: D

Statement-I is incorrect. The synchronized survey for the Nilgiri Tahr is a collaborative effort. It is conducted jointly by the Forest Departments of both Tamil Nadu and Kerala. This is because the habitat of the species spans across the border of these two states in the Southern Western Ghats. A coordinated survey is essential to get an accurate population estimate across its entire range and avoid double-counting.

Statement-II is incorrect. While the Anamalai Tiger Reserve and Mukurthi National Park are crucial habitats with high population densities of the Nilgiri Tahr, its habitat is not confined exclusively to these two areas. The species is found across a 400 km stretch of the Southern Western Ghats, from the Nilgiri Hills down to the Kanyakumari hills, encompassing several other forest divisions and protected areas in both Tamil Nadu and Kerala.

70. Solution: B

Statement 1 is correct. According to the principles of thermodynamics, specifically the Clausius-Clapeyron relation, a warmer atmosphere has a higher capacity to hold moisture. For every 1°C rise in temperature, the atmosphere can hold approximately 7% more water vapour. This increased moisture content provides more "fuel" for precipitation, enhancing the potential for extreme, short-duration rainfall events like cloudbursts, especially during the monsoon season.

Statement 2 is correct. Research suggests a complex relationship between lightning and rainfall. Intense electrical activity within towering cumulonimbus clouds can create electrical disturbances that inhibit the process of droplet coalescence (the merging of smaller water droplets to form larger raindrops). This delay in the release of rain allows the cloud to continue accumulating a massive volume of water, held aloft by strong updrafts. When the updrafts weaken, this huge volume of water is released suddenly, resulting in a cloudburst.

Statement 3 is incorrect. Aerosols like black carbon, originating from sources such as forest fires and pollution, act as Cloud Condensation Nuclei (CCN). Instead of reducing cloud density, these particles increase the number of cloud droplets, which can lead to denser clouds. In the Himalayan region, this altered cloud microphysics, combined with orographic pressure, can actually contribute to conditions that are more favorable for cloudburst-like events, not decrease their likelihood.

71. Solution: A

Statement 1 is incorrect. NITI Aayog was established by an executive reSolution of the Union Cabinet on January 1, 2015, not through an Act of Parliament. Therefore, it is a non-statutory or an executive body, which serves as a policy think-tank for the government. Its predecessor, the Planning Commission, was also formed by an executive reSolution.

Statement 2 is correct. The Governing Council is the primary body for developing a shared national agenda and is composed of the Prime Minister as the Chairperson, all Chief Ministers of states, Chief Ministers of Union Territories with legislatures, and Lieutenant Governors of other Union Territories.

Statement 3 is incorrect. The role of NITI Aayog is primarily advisory. It acts as a think-tank and provides strategic policy inputs. Its recommendations and policy frameworks are not binding on the governments.

72. Solution: D

Statement 1 is incorrect. The threshold for mortality rate for a famine declaration is over 2 deaths per 10,000 people per day. The other two criteria are: at least 20% of households facing extreme food shortages and acute malnutrition in children exceeding 30%.

Statement 2 is incorrect. The Integrated Food Security Phase Classification (IPC) is a multi-partner initiative, not exclusively managed by the FAO. It is a collaborative effort jointly managed by several UN agencies (like FAO, WFP, UNICEF), international bodies, and non-governmental organizations. This partnership ensures a consensus-based and analytically rigorous classification of food security situations.

Statement 3 is incorrect. While a famine declaration carries immense moral and political weight and is a

powerful tool for mobilizing international attention and aid, it does not create a direct, automatic legal obligation on UN member states to provide aid under international law. It significantly strengthens the political and ethical pressure on nations and warring parties to allow humanitarian access and provide assistance, often citing principles of International Humanitarian Law, but it is not a direct legal trigger for compulsory aid.

73. Solution: D

Statement I is correct. The MPC was established through the amendment of the RBI Act, 1934. Its primary mandate is to maintain price stability while keeping in mind the objective of growth. It is legally empowered to fix the benchmark policy rate (repo rate) to achieve the inflation target, which is currently set at 4% with a tolerance band of $\pm 2\%$.

Statement II is correct and explains Statement I. The statutory framework makes the MPC's decisions on the policy rate binding on the RBI. This is a crucial feature that gives the committee its power and ensures that its mandate (Statement I) is effectively executed. This binding nature enforces accountability, as the RBI cannot unilaterally override the committee's decision, thus strengthening the inflation-targeting framework.

Statement III is incorrect. While the three external members nominated by the Central Government do have a term of four years, the RBI Act explicitly states that they are not eligible for re-appointment. This provision is designed to ensure their independence and prevent the establishment of vested interests, allowing for fresh perspectives to be brought into the committee periodically. The internal RBI members' tenure is linked to their position within the RBI.

74. Solution: B

Pair 1 is incorrectly matched. The Tell Atlas is a mountain range located in the northern part of Algeria, running parallel to the Mediterranean coast. This region experiences a Mediterranean climate and is one of the country's most fertile areas. The southern desert region is dominated by the Sahara Desert and the Saharan Atlas range, which lies south of the Tell Atlas.

Pair 2 is correctly matched. The Ahaggar (or Hoggar) Mountains are a highland region located in the central Sahara, in southern Algeria. Mount Tahat, with an elevation of 3,003 meters, is the highest peak in Algeria and is situated within this mountain range. This area is known for its dramatic, rocky landscape.

Pair 3 is incorrectly matched. The M'zab Valley is a limestone plateau located in the northern Sahara Desert, not along the Mediterranean coast. It is a UNESCO World Heritage site renowned for its traditional and well-preserved fortified settlements (ksour) built by the Mozabite Berbers in the 10th century.

75. Solution: C

Statement 1 is correct. A cornerstone of the Forest Rights Act (FRA), 2006, is the empowerment of the Gram Sabha (village assembly). Section 4(5) of the Act requires that no member of a forest-dwelling Scheduled Tribe or traditional forest dweller shall be evicted or removed from forest land under their occupation till the recognition and verification procedure is complete. Furthermore, consent from the Gram Sabha is required for any diversion of forest land.

Statement 2 is correct. The PAT Regulation of 1956 is a specific piece of legislation for the Andaman & Nicobar Islands designed to protect its indigenous tribes. It creates tribal reserves and explicitly prohibits outsiders from settling, acquiring land, or carrying on business in these areas without permission, thereby safeguarding their land and resources.

76. Solution: A

Statement-I is correct. The National Board for Wildlife approved West Bengal's proposal to add 1,044.68 sq km to the Sundarbans Tiger Reserve (STR). This expansion increased the total area to 3,629.57 sq km, elevating its rank to become India's second-largest tiger reserve.

Statement-II is correct. The primary conservation rationale for expanding any tiger reserve is to provide more protected area for the tiger population. In the case of the Sundarbans, the expansion aims to increase the core and buffer areas, which is crucial for a viable population of its unique mangrove-dwelling tigers. This provides them with more space for movement, reduces human-animal conflict at the fringes, and protects the fragile mangrove ecosystem upon which they depend.

Statement-II provides the direct and logical reason for the action mentioned in Statement-I.

77. Solution: C

Statement 1 is correct. The Great Nicobar Project is a strategic initiative driven by NITI Aayog in collaboration with the A&N Administration. Its stated objectives are multi-pronged, focusing on economic development through a transshipment hub to tap into global shipping routes, and enhancing India's geostrategic presence and maritime security in the crucial Indo-Pacific region.

Statement 2 is correct. The Great Nicobar Island, where the project is located, was designated as the Great Nicobar Biosphere Reserve by UNESCO in 2013. The project involves the diversion of a significant area of forest land within this ecologically sensitive and protected area, which has been a major point of concern for environmentalists.

Statement 3 is correct. Galathea Bay, on the

southeastern coast of Great Nicobar, is the proposed site for the international transshipment port. This bay is also globally recognized as an iconic and one of the most important nesting sites for the Giant Leatherback turtle, the world's largest sea turtle. The potential impact of port construction and dredging on this nesting habitat is a critical environmental concern raised against the project.

78. Solution: A

Statement 1 is incorrect. Algeria has a long coastline along the Mediterranean Sea to its north. Therefore, it is not a landlocked country. Its capital, Algiers, is a major port on this coast. The Maghreb region itself is defined by its proximity to the Mediterranean.

Statement 2 is incorrect. Algeria's climate is not uniform. The northern coastal region has a Mediterranean climate characterized by mild, wet winters and hot, dry summers. Further south, a semi-arid or steppe climate prevails in the high plateaus. The vast southern part, which is the Sahara Desert, experiences an arid desert climate.

Statement 3 is correct. Algeria shares extensive land borders with several countries. In the west and southwest, its neighbours include Morocco, Western Sahara, and Mauritania. To the south and southeast, it borders Mali and Niger. To the east, it borders Libya and Tunisia.

79. Solution: A

Statement 1 is incorrect. The Sakura Science Programme focuses on short-term educational visits, not long-term scholarships. The goal is to provide a brief but intensive exposure to Japan's scientific and technological advancements.

Statement 2 is incorrect. While the programme initially focused on Asian countries, it has expanded to include nations from other continents. Participating countries now include those from Africa, such as Egypt, Ghana, Kenya, Nigeria, South Africa, and Zambia.

Statement 3 is correct. The core objective of the Sakura Science Programme is to promote scientific curiosity and a global outlook among young learners. It also aims to encourage cultural understanding and strengthen bilateral ties with Japan by providing participants with exposure to both Japan's scientific achievements and its cultural traditions.

80. Solution: D

The E. coli mercury sensor has a wide range of applications.

Water Safety: Its primary application is to detect toxic heavy metals like mercury in drinking water, ensuring its safety for consumption.

Environmental Monitoring: It can be used to track pollution levels in various water bodies, including

rivers, lakes, and industrial discharge, providing valuable data for environmental management.

Public Health: By providing real-time data on water contamination, it can act as an early warning system for communities, helping to prevent public health crises.

Low-cost Electronics: The sensor is designed to be compatible with portable devices, enabling its use for on-site analysis in the field, which is crucial for rapid response and decision-making. This technology is a significant step forward in the field of programmable bioelectronics and smart diagnostics.

81. Solution: D

The Golden Dome Missile Defense System is a comprehensive, next-generation U.S. missile defense program. Its core strength lies in its multi-layered defense architecture, which is designed to provide a robust shield against a wide spectrum of aerial threats.

This includes not just a single layer of defense but a combination of space-based interceptors, an enhanced Ground-Based Midcourse Defense (GMD) system, and a limited area defense layer. This layered approach is a significant technological leap, aiming to counter not only traditional ballistic missiles but also advanced threats like hypersonic weapons and cruise missiles.

Unlike the Iron Dome, which is a joint U.S.-Israeli project for short-range threats, the Golden Dome is a U.S.-led initiative with a global reach. The system is not limited to space-based interception; it integrates various platforms to create a resilient and effective defense network, enhancing U.S. national security against emerging missile technologies.

82. Solution: D

Mahatma Jyotiba Phule's founding of the Satyashodhak Samaj (Society of Truth-Seekers) in 1873 was a pivotal moment in the anti-caste movement, aimed at liberating the Shudras and Ati-Shudras from the exploitation of the Brahmanical system.

Phule's literary contributions were equally impactful; his book 'Gulamgiri' (Slavery), published in 1873, is a powerful critique of the caste system, drawing a direct and unflinching comparison to the institution of racial slavery in the United States.

Furthermore, Phule was a pioneer of women's education in India. In 1848, he, along with his wife Savitribai Phule, established the first school for girls in Pune. This revolutionary act challenged the patriarchal norms of the time and laid the foundation for the education and empowerment of women in India. Savitribai Phule's role as the first female teacher is a testament to their shared vision and commitment to social equality.

83. Solution: C

The National Deep Water Exploration Mission is a flagship initiative designed to operate in a mission mode, reflecting the government's urgency to enhance India's energy security. Its primary geographical focus is on the hitherto unexplored deep-water regions, including the promising Andaman-Nicobar basin and the offshore areas of the Andhra coast.

The mission is also intrinsically linked to recent policy reforms like the Open Acreage Licensing Policy (OALP), which aims to create a more investor-friendly environment and encourage both domestic and global private players to participate in exploration activities.

However, statement 3 is incorrect. While the Directorate General of Hydrocarbons (DGH) provides support, the nodal ministry for the mission is the Ministry of Petroleum and Natural Gas.

Q84. Solution: C

The proposed GST revamp does not aim for a single GST rate. Instead, it proposes a two-slab structure with core rates of 5% and 18%, which is a simplification from the current multi-slab system but not a single rate.

The 5% rate is intended for merit goods and essential items, while the 18% rate will apply to standard goods and services.

The special 40% rate is proposed for select sin and luxury goods like tobacco, alcohol, and pan masala, not essential food items, which will continue to be zero-rated.

Furthermore, the proposal has not yet been approved by the GST Council. It has been sent to the states and a Group of Ministers (GoM) for their consideration and approval. The implementation is targeted for Diwali 2025, not the next financial year.

85. Solution: A

Sri Aurobindo's philosophy of 'Integral Yoga' is his most significant and enduring contribution to spiritual thought. This philosophy is unique in its emphasis on the spiritual transformation of life on Earth, rather than an escape from it. It seeks to integrate the material and spiritual aspects of existence, aiming for a divine life in a divine body.

86. Solution: A

The key significance of this new type of supernova lies in the novel mechanism of stellar death it has revealed. For the first time, astronomers have observed a supernova being directly triggered by a black hole companion in a binary system.

The black hole's immense gravity siphoned material from the massive star over a long period, eventually

causing the star to collapse and explode. This is a departure from the previously known mechanisms of supernova explosions.

While artificial intelligence algorithms were instrumental in its detection, they have been used to find other cosmic events as well. The supernova was not caused by a neutron star merger, and it occurred about 700 million light-years away, not in the Milky Way.

Therefore, the discovery of a new pathway for the death of massive stars, driven by their interaction with a black hole, is the most profound aspect of this astronomical finding.

87. Solution: A

The National Deep Water Exploration Mission is a strategic initiative with the primary objective of reducing India's significant dependence on imported crude oil and natural gas. To achieve this, the mission will employ cutting-edge technologies, including advanced seismic surveys and artificial intelligence-based tools, to identify and explore new hydrocarbon reserves.

The mission is also a key component of the government's 'Aatmanirbhar Bharat' (self-reliant India) vision, as it seeks to enhance domestic energy production and strengthen the country's energy security.

However, statement 3 is incorrect. The nodal ministry for this mission is the Ministry of Petroleum and Natural Gas. While it may collaborate with other ministries and institutions, it is not a joint initiative with the Ministry of Earth Sciences in the way the statement implies.

88. Solution: B

During his active political life, Sri Aurobindo was a leading figure of the radical nationalist faction of the Indian freedom struggle. He was a staunch advocate for purna swaraj, or complete independence, from British rule.

He rejected the moderate politics of petition and prayer, instead calling for direct action and passive resistance. His association with revolutionary societies like the Anushilan Samiti and his writings in the journal 'Bande Mataram' clearly indicate his radical stance. His arrest in the Alipore Bomb Case further underscores his involvement in revolutionary activities.

It was only after his spiritual transformation in prison that he withdrew from active politics and dedicated his life to spiritual pursuits.

89. Solution: B

The Sarvottam Yudh Seva Medal (SYSM) is India's highest wartime distinguished service decoration.

It is awarded for "distinguished service of the most exceptional order during war, conflict or hostilities."

It is the wartime equivalent of the Param Vishisht Seva Medal (PVSM), which is awarded for distinguished service during peacetime. The SYSM is not a gallantry award like the Param Vir Chakra, which is awarded for acts of valor in the face of the enemy.

The SYSM recognizes extraordinary leadership and operational planning at the highest level during a conflict. Its rarity, with only a handful of recipients since its institution in 1980, underscores its prestige.

90. Solution: C

The Cauvery Wildlife Sanctuary is located in Karnataka and shares a boundary with the forests of Tamil Nadu.

It experiences a semi-arid climate and benefits from both the southwest and northeast monsoons.

The sanctuary is a biodiversity hotspot and provides a habitat for several endangered species, including the grizzled giant squirrel, smooth-coated otter, and hump-backed mahseer fish.

However, statement 4 is incorrect. The landscape of the sanctuary is predominantly dry deciduous and thorn forests, with some riverine patches and evergreen sholas.

91. Solution: B

Statement 1 is incorrect because while the grounds for removal are 'proved misbehaviour or incapacity', these terms are not explicitly defined in the Constitution. Their interpretation is left to the judicial inquiry committee that investigates the allegations. This ambiguity allows for a case-by-case examination based on the evidence presented.

Statement 2 is correct. The process for the removal of the Chief Election Commissioner (CEC) is the same as that for a Supreme Court judge, as stipulated under Article 324(5) of the Constitution. This provides a significant safeguard to ensure the independence and autonomy of the Election Commission.

Statement 3 is incorrect. An Election Commissioner or a Regional Commissioner cannot be removed from office except on the recommendation of the CEC. This provision is crucial as it fortifies the institutional integrity of the Election Commission, protecting other commissioners from arbitrary removal by the executive and ensuring that the CEC's authority is maintained within the commission's structure.

92. Solution: A

Statement I is correct. Unlike State Legislatures, which draw their powers directly from the Constitution, the Legislative Assemblies of Union Territories are created by and derive their powers from Acts of Parliament. For example, the assemblies for

Puducherry and Jammu & Kashmir are governed by the Government of Union Territories Act, 1963, and the J&K Reorganisation Act, 2019, respectively.

Statement II is also correct and provides a clear explanation for Statement I. Because UTs are under the direct administration of the Union, the Parliament can create provisions that grant nomination powers directly to the Central Government or its representative, the Lieutenant Governor. This was affirmed in judicial rulings like the Lakshminarayanan case (2018) for Puducherry.

The Union's primacy in these matters reflects the constitutional status of UTs, where the LG is not always bound by the aid and advice of the local Council of Ministers, especially in matters of nominations specified by a Parliamentary statute.

93. Solution: D

The primary objective of the Maritime State Development Council (MSDC) is to strengthen cooperative federalism and ensure integrated planning between the Centre and maritime States. The MSDC is envisioned as a coordinating body where the Union government and state governments can collaborate on the holistic development of the port sector. This includes aligning national priorities with state-level port management, especially for non-major ports which fall under state jurisdiction.

94. Solution: B

Statement 1 is incorrect. While global collaboration is a feature of India's broader space ambitions, the establishment of the 'Bharat Antariksh Station' by 2035 is presented as an indigenous project to create India's own space station for long-duration experiments. The focus is on building self-reliant capabilities in space.

Statement 2 is incorrect. The Gaganyaan Mission (planned for 2027) is India's first human spaceflight mission, but its objective is to send astronauts into Low Earth Orbit (LEO), not to the lunar surface. The crewed lunar landing is a separate, more ambitious goal set for 2040. Gaganyaan is a crucial precursor to test and validate technologies for human space travel.

Statement 3 is correct. The Vyommitra Mission, scheduled for 2026, is an uncrewed flight that will feature a humanoid robot named Vyommitra. This mission is a critical technology demonstrator, designed to test the efficacy of the crew module's systems, including life support, navigation, and control, in a space environment before risking human lives on the Gaganyaan mission.

95. Solution: B

Statement 1 is incorrect. The innovation of this specific system is its placement between the railway tracks, not on the roofs of coaches. This design specifically aims to use the underutilized space on the ground

level within the railway infrastructure network.

Statement 2 is incorrect. The primary objective is to utilize the narrow, otherwise unused space between the tracks, which avoids the need for large land acquisitions required for traditional solar farms. This makes it a space-efficient Solution for generating clean energy directly within the operational area of the railways, rather than on separate, larger land parcels.

Statement 3 is correct. A key feature of this system is its removable design. The panels can be easily lifted or detached. This is crucial for practical implementation on a live railway network, as it allows for routine track maintenance, inspections, and swift clearance in case of emergencies or derailments, ensuring that the solar installation does not impede essential railway operations.

96. Solution: A

Statement I correctly states that the plan to land an Indian astronaut on the Moon by 2040 is part of the broader 'Viksit Bharat by 2047'. This national goal aims for India to become a developed nation by its 100th year of independence, and achieving advanced capabilities in frontier sectors like space exploration is a key indicator of this status.

Statement II explains how the space mission contributes to this vision. By focusing on indigenous development of critical technologies like launch vehicles, life support, and surface exploration systems, India is not just aiming for a symbolic achievement.

This strategy builds self-reliance, fosters a high-tech manufacturing ecosystem, and creates intellectual property. These capabilities are essential for capturing a larger share of the projected \$45 billion space economy, thereby directly contributing to the economic and technological advancement central to the 'Viksit Bharat' goal.

The emphasis on self-reliance is the core mechanism through which the space program becomes an engine for national development.

97. Solution: C

Statement 1 is incorrect. The UNHCR was created in 1950 by a reResolution of the UN General Assembly, not the Security Council. It began its operations in 1951 with an initial three-year mandate to address the refugee crisis in post-World War II Europe, which was later made permanent.

Statement 2 is incorrect. While the UNHCR's core mandate is to protect refugees, its work also extends to other groups of displaced persons. The agency is mandated to protect and support refugees, stateless persons, and internally displaced people (IDPs). Its involvement with IDPs has grown significantly over

the decades as internal conflicts have become more prevalent.

Statement 3 is incorrect. The UNHCR is funded almost entirely by voluntary contributions, not mandatory payments from UN member states. The vast majority of its budget comes from governments, with significant contributions also coming from private donors, corporations, and foundations. This funding model means the agency's resources can fluctuate based on donor priorities and global economic conditions.

98. Solution: A

Statement 1 is incorrect. Ranthambore National Park is situated at the junction of the Aravalli and Vindhya hill ranges, not the Deccan Plateau. This unique geographical location contributes to its rich biodiversity, as it represents a transition zone between two distinct geological and ecological systems.

Statement 2 is correct. The area was declared the Sawai Madhopur Game Sanctuary in 1955 and became one of the first nine reserves to be included in Project Tiger when it was launched in 1973. This historical significance marks it as a crucial site for tiger conservation in India from the very beginning of the national conservation effort. It was later upgraded to a National Park in 1980.

Statement 3 is incorrect. Ranthambore National Park, like other Project Tiger reserves, has a well-defined structure of core and buffer zones. The total area of 1,334 sq. km with a core area of approximately 275 sq. km. The surrounding forests, including the Sawai Mansingh and Kailadevi Sanctuaries, act as important buffer zones that help in managing the tiger population and reducing human-wildlife conflict.

99. Solution: B

Statement 1 is correct. The practice of nominating members from the Anglo-Indian community to the Lok Sabha and certain State Legislative Assemblies was ended by the 104th Constitutional Amendment Act, 2019, which came into effect in January 2020.

Statement 2 is incorrect. The Governor nominates about 1/6th of the members to a State Legislative Council from among persons having special knowledge or practical experience in fields like literature, science, art, cooperative movement, and social service. This is done on the aid and advice of the State's Council of Ministers, not on the recommendation of the President.

Statement 3 is incorrect. Not all UTs with a legislative assembly have nominated members. For example, the Legislative Assembly of Delhi has no provision for nominated MLAs; it consists only of 70 elected members.

100. Solution: C

The correct sequence for the removal of the Chief Election Commissioner (CEC), which is the same as for a Supreme Court Judge, is as follows:

Initiation (1): A motion alleging misbehaviour or incapacity is introduced in either the Lok Sabha or the Rajya Sabha. It requires the support of at least 100 members in the Lok Sabha or 50 members in the Rajya Sabha for admission.

Inquiry (4): Once the motion is admitted by the Presiding Officer, a three-member judicial inquiry committee is constituted to investigate the charges and validate the evidence. This committee comprises a Supreme Court judge, a Chief Justice of a High Court, and a distinguished jurist.

Voting in Parliament (3): If the inquiry committee finds the CEC guilty, the motion is taken up for consideration and voting in Parliament. It must be passed in each House by a special majority, which is a majority of the total membership of that House and a majority of not less than two-thirds of the members of that House present and voting.

Presidential Action (2): After the motion is passed by both Houses of Parliament with the requisite majority, an address is presented to the President, who then issues an order for the removal of the CEC.