General Studies
Current Affair Test (June-2025)

1. Solution: c)

- Statement-I is correct. Brazil reported its first case of highly pathogenic avian influenza on a commercial poultry farm in May 2025. As Brazil is the world's largest chicken exporter, this development indeed raised significant alarms over global poultry supply chains, with concerns about potential trade disruptions and economic impacts. Importing countries like China immediately reacted by banning imports from affected regions.
- Statement-II is incorrect. Brazil is not a minor player; it is the world's largest chicken exporter, accounting for a substantial share (around 35%) of the global chicken trade. Its exports in 2024 were valued at $10 billion, supplying around 150 countries. Therefore, any disruption in its poultry sector has major implications for global supply, contradicting the claim that it accounts for only 5% and is a minor player.

2. Solution: b)

- Statement 1 is incorrect. Data from the GRAIL mission revealed the opposite: the nearside crust is thinner than the farside crust. This thinner nearside crust allowed magma from the Moon's interior to erupt more easily, leading to the formation of the large, dark volcanic plains (mare) predominantly seen on the nearside. The farside has a thicker crust, which largely prevented such extensive volcanic activity.
- Statement 2 is incorrect. While the GRAIL mission confirmed that the Moon's nearside was more volcanically active due to higher concentrations of heat-producing elements, these elements are primarily thorium and titanium, not helium and argon. These radioactive elements, concentrated in the nearside mantle, generated more heat, fueling volcanism.
- Statement 3 is correct. One of the key findings from the GRAIL mission and subsequent studies is the thermal asymmetry of the Moon's mantle. The nearside mantle, enriched with heat-producing radioactive elements, is estimated to be significantly warmer than the far side mantle. This temperature difference is reported to be about 100-200°C (or 180-360°F) hotter on the nearside. This thermal imbalance has played a crucial role in the Moon's geological evolution and the differences observed between its two hemispheres.

3. Solution: c)

- The United Nations Security Council holds the primary responsibility for the maintenance of international peace and security. As such, it is the UN body that mandates and establishes UN Peacekeeping operations through formal resolutions.
- While the UN General Assembly plays a crucial role in approving the budget and apportioning expenses for these operations, and the UN Secretariat, through the Department of Peace Operations (DPO), manages and provides executive direction to these missions, the authority to create, define the mandate of, and terminate peacekeeping operations rests with the Security Council.
- The International Court of Justice is the principal judicial organ of the UN, dealing with legal disputes between states, and is not involved in mandating peacekeeping operations.

4. Solution: c)

- Statement-I is correct. Reports and official statements indicate that UNIFIL faces ongoing challenges, including restrictions on its freedom of movement and access within its area of operations in Southern Lebanon. Incidents such as attacks on patrols or obstruction by various actors contribute to these challenges, despite its mandate guaranteeing freedom of movement.
- Statement-II is incorrect. UN Security Council Resolution 1701 mandates UNIFIL to accompany and support the Lebanese Armed Forces (LAF) as they deploy throughout the South and to coordinate its activities with the Government of Lebanon. It does not mandate UNIFIL to operate independently of the LAF in all aspects or to unilaterally disarm all armed groups without the consent or lead of the Lebanese government.
- The resolution calls for the disarmament of all armed groups so that there will be no weapons or authority in Lebanon other than that of the Lebanese State, emphasizing the sovereignty and responsibility of the Lebanese government, with UNIFIL assisting these efforts. The resolution emphasizes assisting the Government of Lebanon in ensuring the return of its effective authority.

5. Solution: b)

- Statement 1 is incorrect. New Caledonia is not an independent sovereign nation but a French overseas collectivity. It has administrative ties to France but enjoys a high degree of autonomy. Recent talks over its political status, including proposals for "sovereignty in partnership," indicate its ongoing dependent status.

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- Statement 2 is incorrect. While the indigenous Kanak people are a significant part of the population and have a strong independence movement (e.g., the Kanak-led FLNKS), they do not constitute an overall majority that has consistently voted for maintaining ties. In fact, referendums on independence (2018, 2020, 2021) were rejected, but the 2021 referendum saw a boycott by pro-independence Kanak groups, and unrest has revived demands for full independence. The political situation is complex, with significant divisions.
- Statement 3 is correct. New Caledonia is renowned for its New Caledonian Barrier Reef, which is a UNESCO World Heritage Site. This reef system encloses one of the world's largest coral reef lagoons, highlighting its significant ecological value.

6. Solution: a)

- Statement 1 is incorrect. The Malabar Large-Spotted Civet is a carnivorous mammal. Its diet includes reptiles, birds, amphibians, fish, small mammals, eggs, and also fruits, making it more of an omnivore with a strong carnivorous preference, rather than primarily herbivorous.
- Statement 2 is incorrect. The IUCN status of the Malabar Large-Spotted Civet (Viverra civettina) is Critically Endangered (CR), not 'Vulnerable'. This indicates a very high risk of extinction in the wild.
- Statement 3 is correct. The physical traits described are accurate: it features grey fur with dark spots, five white tail rings, and a distinct black dorsal crest. It weighs around 18–20 lbs and is estimated to be about 4 feet in length.
- Statement 4 is incorrect. The Malabar Large-Spotted Civet is nocturnal (active at night) and solitary in behavior, not diurnal (active during the day) and social. Females usually bear 2–3 offspring per litter.

7. Solution: d)

- Statement-I is incorrect. Sikkim's integration into India was not a military annexation. It occurred through a peaceful political process culminating in the 36th Constitutional Amendment in 1975. This followed a referendum in Sikkim where over 97% of the electorate voted in favour of abolishing the monarchy (the Chogyals) and joining India. Prior to this, Sikkim was an Indian protectorate under the 1950 Indo-Sikkim Treaty.
- Statement-II is correct. Sikkim shares a domestic border with the Indian state of West Bengal to its south. It also holds significant strategic importance for India, particularly due to its location acting as a buffer state with China and its proximity to sensitive areas like the Doklam tri-junction (near the India-China-Bhutan border), which has been a point of geopolitical tension.

8. Solution: d)

- Statement 1 is incorrect. The Official Secrets Act, 1923, applies broadly to government officials, civilians, foreign nationals, or any individual in possession of classified information. It is not exclusive to foreign nationals; Indian citizens can also be prosecuted under it.
- Statement 2 is incorrect. Section 5, dealing with wrongful communication, covers situations where even unintentional or careless handling of sensitive information leads to its disclosure. Proof of intent to harm national security might affect the severity, but the act of wrongful communication itself, even if due to negligence, can be punishable.
- Statement 3 is incorrect. The Act allows for prosecutions under the OSA to be kept confidential (in-camera proceedings) if deemed necessary for national interest or safety. Public disclosure of all proceedings is not mandatory.

9. Solution: a)

- Statement 1 is incorrect. Operation Olivia is a flagship marine conservation initiative launched annually by the Indian Coast Guard (ICG), not the MoEFCC, and it specifically runs from November to May. It is primarily focused on the protection of Olive Ridley turtles during their mass nesting season, not all sea turtle species year-round.
- Statement 2 is incorrect. While Gahirmatha is a critical nesting site, Operation Olivia's efforts extend to other key nesting beaches in Odisha, including Rushikulya and Devi river mouths. It is not exclusively focused on Gahirmatha.
- Statement 3 is correct. A significant objective of Operation Olivia is to promote and enforce the use of Turtle Excluder Devices (TEDs) among fishing communities. This helps in reducing accidental turtle mortality in fishing nets.
- Statement 4 is incorrect. The Indian Coast Guard (ICG) is the lead organization conducting surveillance through surface patrols and aerial missions for Operation Olivia, in collaboration with other agencies and communities. The Indian Navy is not the lead agency for this specific operation.

10. Solution: d)

- Statement-I is incorrect. The tradition of facial tattooing among Kandha women did not originate primarily as an aesthetic practice or for marital eligibility. Its primary origin was a protective measure: women tattooed their faces with dark, geometric patterns to appear unattractive and thereby avoid sexual exploitation by local landlords and colonial forces. While it later evolved into a cultural identity marker and became linked to marital eligibility, its foundational purpose was protection through disfigurement.

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- Statement-II is correct. The practice has practically vanished among women under 40. This decline is indeed attributed to various factors, including awareness campaigns against the painful ritual, increased educational attainment among tribal girls, and a consequent shift in cultural perceptions. Younger generations no longer see the practice as necessary for protection or as a relevant cultural marker in the contemporary context. These interventions gained momentum from the 1990s onwards.

11. Solution: c)

The Golan Heights is geographically enclosed by the Jordan River, Sea of Galilee, Mount Hermon, Wadi Al-Ruqqād, and Yarmūk River.

The Economist

12. Solution: c)

Statement 1 is correct: The Lok Sabha Speaker constitutes the JPC.

Statement 2 is incorrect: Members are drawn from both Lok Sabha and Rajya Sabha.

Statement 3 is correct: JPCs are required to submit their report within 90 days, subject to extensions.

Statement 4 is correct: The JPC reflects proportional party strength in Parliament.

About Joint Parliamentary Committee (JPC):

- What is it:A JPC is an ad-hoc and bipartisan committee constituted to examine specific matters such as proposed legislation or policy issues in detail.
- Law governing formation:Formed under the Rules of Procedure and Conduct of Business in Lok Sabha.
- Who forms it:The Lok Sabha Speaker constitutes the JPC, and members are drawn from both Houses of Parliament.
- Once formed, the committee will have 90 daysto submit its report, though this deadline can be extended if needed.

Members Selection: Typically, up to 31 MPs (21 from Lok Sabha and 10 from Rajya Sabha) are selected, reflecting proportional party strength.

13. Solution: c)

The Crime and Criminal Tracking Network & Systems (CCTNS) is an initiative to create a comprehensive and integrated system for enhancing the efficiency and effectiveness of policing. However, the statements provided are all incorrect for the following reasons:

- Statement 1 is incorrect: CCTNS does not use AI algorithms for predictive policing. Its primary focus is on facilitating the tracking of crimes and criminals across the country and ensuring improved coordination among police stations.
- Statement 2 is incorrect: Although CCTNS provides citizen-centric services, such as filing complaints and accessing FIR status via its portal, it does not grant direct access to police station records to the general public. Access is restricted to authorized personnel to maintain confidentiality and security.
- Statement 3 is incorrect: While CCTNS aims to minimize manual processes by enabling electronic crime reporting and record-keeping, manual reporting has not been entirely eliminated due to varying levels of digitization and implementation across states.

14. Solution: a)

Statement 1 is incorrect: In hilly regions, cold wave conditions are generally declared when the minimum temperature drops below 0°C, not 5°C. This distinction is crucial as the threshold varies by geography, with plains having a higher temperature threshold.

Statement 2 is incorrect: Snowfall in the Himalayas significantly influences cold wave conditions in northern India. The snowfall enhances the strength of cold winds descending from the mountains, which subsequently sweep across the northern plains, leading to a sharp drop in temperatures and intensifying cold wave conditions.

Statement 3 is correct: Clear skies and calm winds during winter reduce cloud cover and wind-mixing, resulting in enhanced radiative cooling at night. This intensifies cold wave conditions by lowering surface temperatures significantly.

15. Solution: c)

Statement 2 is incorrect.

Powers and Function:

- The JPC is an ad-hoc Committee.
- Examines bills, policies, or specific issues referred to it.
- Consults stakeholders, experts, and officials for comprehensive analysis.
- Can summon documents, witnesses, and experts for deliberations.

- The committee's recommendations are advisory and not mandatory for the government to follow.
- Reports to:Submits its detailed findings and recommendations to the Parliament for further discussion and action.

16. Solution: a)

- Statement 1 is correct: Vents host unique organisms, offering insights into life in extreme conditions.
- Statement 2 is incorrect: Oxygen production primarily occurs through photosynthesis in the ocean's photic zone, not near hydrothermal vents.
- Statement 3 is correct: Vents contain economically important minerals like copper, cobalt, and zinc.

Significance:

- Mineral Deposits:Rich in economically beneficial minerals like copper, zinc, cobalt, nickel, gold, and silver.
- Ecosystem Insights:Hosts unique chemosynthetic organisms, providing insights into life in extreme environments.
- Economic Potential:Long activity spans (hundreds to thousands of years) make them valuable for sustained exploration.
- Scientific Research:Offers understanding of deep-sea geological processes and resource potential for strategic missions like India's Deep Ocean Mission.

17. Solution: a)

Statement 1 is incorrect: The Ganges River Dolphin is listed as "Endangered" under the IUCN Red List, not "Critically Endangered."

Statement 2 is incorrect: The species is nearly blind and relies on echolocation, not visual navigation.

Statement 3 is correct: It is protected under Schedule-I of the Wildlife (Protection) Act, 1972.

Statement 4 is incorrect: The dolphin is found in India, Nepal, and Bangladesh, not Bhutan.

About Ganges River Dolphin:

- Scientific name:Platanista gangetica gangetica
- Common name:Susu
- Habitat:Found in freshwater river systems, including the Ganga-Brahmaputra-Meghna and Karnaphuli-Sangu in India, Nepal, and Bangladesh.

Characteristics:

- Nearly blind, relying on echolocation for navigation and hunting.
- Lives exclusively in freshwater ecosystems.
- Sturdy, flexible body with large flippers and low triangular dorsal fins.
- Females are larger than males and reproduce every 2-3 years, giving birth to a single calf.
- Newborns are chocolate brown, turning grey-brown as adults.

Conservation status:

- IUCN:Endangered
- Wildlife (Protection) Act, 1972:Schedule-I
- CITES:Appendix I

18. Solution: b)

Statements 1 and 3 are correct. Fiscal prudence includes counter-cyclical fiscal policies and subsidy rationalization. However, statement 2 is incorrect as fiscal prudence does not discourage debt outright but focuses on sustainable debt levels.

What is Fiscal Prudence?

- Definition:Fiscal prudence refers to the responsible management of public finances, focusing on controlling deficits, maintaining sustainable debt levels, and prioritizing productive expenditure.

Initiatives to Achieve Fiscal Prudence:

RBI:

- State-Specific Fiscal Responsibility Legislations (FRLs):Legal framework for fiscal discipline.
- Monitoring Off-Budget Borrowings:Enhanced reporting and transparency.
- Encouraging Counter-Cyclical Fiscal Policies:Advocating expenditure and savings based on economic cycles.

19. Solution: b)

About Libya:

- Location:Situated in North Africa, bordered by the Mediterranean Sea to the north.

Capital:

- Border Nations:Egypt (east), Sudan (southeast), Chad (south), Niger (southwest), Algeria (west), and Tunisia (northwest).

20. Solution: d)

Underwater cables are preferred for faster speeds, higher capacity, and cost-efficiency compared to satellites, making them ideal for large-scale data transfer.

Features:

- Depth and Placement:Buried near shores; placed directly on seabed in deep waters.
- Data Capacity:Can carry up to 224 Tbps in new-generation cables.
- Durability:Protected with multiple layers; routed to avoid fault zones, fishing areas, and anchors.
- Speed:Faster and more cost-efficient than satellite communication for large-scale data transfer.

Why Underwater Cables over Satellites?

- Higher Capacity:Cables handle far more data than satellites.
- Cost-Effective:Cheaper on a bit-for-bit basis for large-scale data transfer.
- Reliability:More stable connections compared to satellites, especially for high-volume data.

21. Solution: b)

- Statement 1 is incorrect. The Border Roads Organisation (BRO) functions under the Ministry

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of Defence. While it plays a crucial role along the borders with China and Pakistan, its mandate extends to other border areas (e.g., Myanmar, Bangladesh, Bhutan) and friendly foreign countries, as well as infrastructure development in difficult terrains within India, including non-border areas.

- Statement 2 is incorrect. The Sela Tunnel project provides all-weather connectivity to Tawang and other forward areas. It is located in Arunachal Pradesh, near the border with China (Tibet Autonomous Region), not Sikkim or near the Nepal border.
- Statement 3 is correct. The Vibrant Villages Programme is a centrally sponsored scheme announced in the 2022 budget, focusing on comprehensive development of select border villages primarily along India's northern border (states like Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh, and UT of Ladakh) facing China, to improve infrastructure, livelihood opportunities, and reverse out-migration.
- Statement 4 is correct. Project DANTAK is one of the oldest projects undertaken by the BRO, established in 1961 at the request of the Bhutanese government. It has been instrumental in developing crucial road infrastructure (highways, bridges, airfields) within Bhutan, signifying strong India-Bhutan bilateral ties.

22. Solution: b)

- Statement 1 is correct. The Chambal River originates from Bhadakla Falls near Janapav Hills in the Indore district of Madhya Pradesh. It is well-known for flowing through Vindhyan scarplands, creating badlands and ravines.
- Statement 2 is incorrect. While the Chambal River is part of the Ganga drainage system, it is a major tributary of the Yamuna River, not directly of the Ganga. It confluences with the Yamuna River in Jalaun district, Uttar Pradesh. The Yamuna subsequently joins the Ganga.
- Statement 3 is correct. The National Chambal Sanctuary, a tri-state protected riverine zone, has a primary focus on the conservation of the Gharial (boasting the world's largest population), the endangered Ganges River Dolphin, and the Red-crowned Roof Turtle. While Mugger crocodiles are also found, the explicitly stated primary focus includes the Gharial and Ganges Dolphin.

23. Solution: c)

The 'MY Bharat' (Mera Yuva Bharat) portal is designed as an autonomous body under the Ministry of Youth Affairs and Sports. Its primary aim is to provide a tech-driven institutional platform for youth development and youth-led transformation. This involves fostering inclusive youth participation in national development, preparing youth as change-makers for Amrit Kaal and Viksit Bharat@2047, and providing equal opportunities for learning, volunteering, and mentorship.

Option (a) is incorrect as direct financial assistance for entrepreneurship is not stated as its core objective, though it connects youth to opportunities.

Option (b) is too narrow; while digital profiles list skills, its purpose is broader than just job placements.

Option (d) is incorrect as it's not exclusively for scholarships, but for holistic youth development and engagement.

24. Solution: a)

- Statement-I is correct. Drone-based QKD, like other QKD methods, provides a secure method of key exchange using quantum mechanics. Its security is based on physical laws, making it "provably secure" and "quantum-resilient," unlike classical encryption which relies on computational difficulty that quantum computers might break.
- Statement-II is correct. The security of QKD heavily relies on fundamental quantum principles. The no-cloning theorem states that an arbitrary unknown quantum state cannot be perfectly copied. The measurement disturbance principle implies that any attempt to measure a quantum state will disturb it. These principles ensure that if an eavesdropper tries to intercept and measure the photons carrying the key information, their actions will introduce errors or changes that can be detected by the legitimate users.

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

25. Solution: a)

- Statement 1 is incorrect. Geotubes are made from high-performance woven geotextiles (typically polypropylene or polyester) that are permeable. This permeability is a key feature, allowing water to pass through while retaining the fill material (sand or slurry), which aids in dewatering and consolidation.
- Statement 2 is incorrect. While stability is crucial, geotubes do not always require deep excavation. They can be placed directly on the seabed or a prepared foundation. Their large size and weight when filled contribute to stability. The Poonthura example involved placing them to form submerged breakwaters, not necessarily with deep excavation as a universal rule.
- Statement 3 is correct. One of the primary functions of geotubes, especially when used as submerged breakwaters or near-shore structures, is to act as a barrier that absorbs and dissipates wave energy. By reducing the energy of waves before they impact the shoreline, they help prevent erosion and can promote sand accumulation.

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26. Solution: d)

The Tibetan Plateau, often called the "Roof of the World," is characterized by extremely high average elevations (4,500–5,000 metres).

Option (a) is correctly associated; the Qiangtang Plateau in northern Tibet is a high-altitude, cold desert.

Option (b) is correctly associated; the Himalayas form its southern boundary, and the Kunlun Mountains are to its north.

Option (c) is correctly associated; the southeastern parts of Tibet feature deep valleys and ravines carved by major rivers.

Option (d) is not associated with the Tibetan Plateau. Extensive, low-lying coastal plains and mangrove ecosystems are features of coastal regions at or near sea level, which is antithetical to the high-altitude, landlocked nature of Tibet.

27. Solution: b)

- Statement 1 is incorrect. While the National Chambal Sanctuary is a tri-state protected riverine zone (Madhya Pradesh, Rajasthan, Uttar Pradesh), its management involves the respective state forest departments. While central guidelines and funding may be involved, it's not exclusively managed by the central ministry alone without state participation.
- Statement 2 is incorrect. The sanctuary's topography is characterized by ravines, sandy stretches, and hilly terrain, and its flora consists mainly of dry deciduous forests typical of the Kathiar-Gir ecoregion. Dense tropical rainforests and mangrove swamps are not features of this region.
- Statement 3 is correct. The National Chambal Sanctuary is recognized as an Important Bird Area (IBA), highlighting its crucial role in supporting diverse bird populations, including resident and migratory species.

28. Solution: c)

- The Extended Fund Facility (EFF) is a specific lending mechanism of the IMF designed with a distinct purpose.
- Option (a) is incorrect because short-term liquidity support for temporary balance of payments issues is typically addressed by other IMF facilities like Stand-By Arrangements (SBAs), not primarily the EFF. The EFF is for prolonged issues.
- Option (b) is incorrect. EFF provides repayable loans, not grants. While the IMF has facilities that support poverty reduction (like the Poverty Reduction and Growth Trust), the EFF's core function is different and loan-based.
- Option (c) is correct. The EFF is specifically designed to help countries that are facing prolonged balance of payments problems stemming from deep-rooted structural economic weaknesses. Its primary purpose is to support comprehensive programs that include medium-term structural reforms aimed at correcting these underlying issues, such as improving tax systems, reducing inflation, or curbing unsustainable fiscal deficits.
- Option (d) is incorrect. The IMF, through facilities like the EFF, provides balance of payments support and policy advice; it does not typically fund specific infrastructure projects in the manner of development banks like the World Bank.

29. Solution: d)

- Statement 1 is incorrect. The Territorial Army is not a full-time professional military force. It is a volunteer reserve force comprising part-time "citizen soldiers" who are gainfully employed in civilian professions. They undergo military training for a short duration each year and are called upon for service only when required, such as during national emergencies or conflicts.
- Statement 2 is incorrect. The power of the Army Chief to mobilise the Territorial Army is not merely inherent but is governed by legal provisions. Specifically, Rule 33 of the Territorial Army Act, 1948, permits full mobilisation during national exigencies. The recent context mentions the Ministry of Defence empowering the Army Chief under this specific rule.
- Statement 3 is incorrect. The Territorial Army primarily recruits Indian citizens from various civilian backgrounds, including businessmen, professionals, and other employed individuals, aged 18–42, who are medically fit. It does not primarily recruit from paramilitary forces, though individuals from various backgrounds can apply if they meet the eligibility criteria. The aim is to engage citizens in nation-building through defence service.

30. Solution: d)

- Operation Keller was a search and destroy mission initiated based on specific intelligence.
- Option (a) is incorrect as Operation Keller was a counter-terrorism operation, not a disaster relief mission.
- Option (b) is incorrect. Operation Keller was a kinetic military operation focused on counter-terrorism. While community engagement might be part of a broader strategy, it was not the primary aim of this specific operation. The operation was conducted by the Indian Army in coordination with J&K Police and CRPF.
- Option (c) is incorrect. While maintaining security along the LoC is an ongoing Army task, Operation Keller was a targeted internal security operation within Shopian, not primarily about establishing new LoC posts.
- Option (d) is correct. The stated objectives of Operation Keller included neutralising The Resistance Front (TRF) terrorists responsible for

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the Pahalgam attack and specifically eliminating Shahid Kuttay, a top TRF commander. This clearly indicates its focus on targeting specific terrorist leadership and cadres in the Shopian district.

31. Solution: d)

Statement 1 is incorrect. China's "nine-dash line" (or more recently, a "ten-dash line" including Taiwan) claim encompasses almost the entirety (roughly 90%) of the South China Sea, not just 50%. Furthermore, this claim was largely invalidated by a 2016 arbitral tribunal ruling under UNCLOS, a ruling that China refuses to recognize. It is not largely accepted under UNCLOS.

Statement 2 is incorrect. The Paracel Islands are primarily claimed by China, Taiwan, and Vietnam. China currently controls them in their entirety after seizing them from South Vietnam in 1974. The Philippines and Malaysia are major claimants in the Spratly Islands dispute, not primarily the Paracels, and China is an assertive claimant, not a mediator, in the Paracel dispute.

Statement 3 is incorrect. The China Sea Basin is the deepest part of the South China Sea, with depths reaching up to approximately 5,016 meters. The Sunda Shelf is a broad, shallow continental shelf connecting the South China Sea to the Gulf of Thailand and Java Sea; it is not the deepest part. While hydrocarbon exploration occurs in various parts of the South China Sea, including areas overlying the Sunda Shelf, the statement incorrectly identifies the Sunda Shelf as the deepest part.

32. Solution: a)

Statement 1 is incorrect. The Green Hydrogen Certification Scheme of India (GHCI) was launched by the Ministry of New and Renewable Energy (MNRE), not the Ministry of Power. The Bureau of Energy Efficiency (BEE) is designated as the Nodal Agency for the scheme, responsible for its implementation and oversight. The actual certification will be carried out by Accredited Carbon Verification (ACV) Agencies.

Statement 2 is correct. A key objective of the GHCI is to certify hydrogen as "green" based on its emissions intensity. This involves defining a specific greenhouse gas (GHG) emission threshold that must be met during the production process. The metric used is kilograms of carbon dioxide equivalent per kilogram of hydrogen (kg CO2 eq/kg H2). Hydrogen produced must meet this benchmark, ensuring it is derived exclusively from renewable energy sources, to qualify for green certification.

Statement 3 is incorrect. The scope of the GHCI is project-level certification that extends up to the point of hydrogen purification. It explicitly excludes the transportation and storage phases of the hydrogen lifecycle. While traceability is a goal, the current certification framework focuses on the production process itself.

Statement 4 is incorrect. Compliance with the GHCI is mandatory for all domestic hydrogen producers who wish to label their product as "green" for use within India. However, the scheme provides an exemption for units that are producing hydrogen exclusively for export purposes. This distinction is important for facilitating India's green hydrogen export ambitions while ensuring credibility in the domestic market.

33. Solution: c)

The Red-Crowned Roofed Turtle (Batagur kachuga) is listed as Critically Endangered on the IUCN Red List, signifying an extremely high risk of extinction in the wild. This is its current global protection status.

Among the primary threats, habitat degradation is a major factor. This includes pollution of their riverine habitats, disturbances from dam construction which alter river flow and sediment dynamics, and excessive water abstraction. Specifically, sand mining on riverbanks and farming on these banks destroy their critical nesting sites, as these turtles require sandy beaches or sandbars to lay their eggs. Poaching for meat and shells is another severe threat.

34. Solution: d)

Statement 1 is incorrect. The eligibility criteria for appointment as a Judge of the Supreme Court (and thus, by extension, for the CJI who is appointed from amongst these judges) are: being a citizen of India, and having served as a Judge of a High Court for at least five years (not ten), or having been an advocate in a High Court for at least ten years (not five), or being a distinguished jurist in the opinion of the President. The statement reverses the required years of service for a High Court judge and an advocate.

Statement 2 is incorrect. The Constitution of India does not prescribe a fixed tenure for the office of the Chief Justice of India. A CJI, like other Supreme Court judges, holds office until they attain the age of 65 years, as per Article 124(2) of the Constitution. The actual length of their tenure as CJI depends on their age at the time of appointment to this specific office.

Statement 3 is incorrect. Article 126 of the Constitution provides for the appointment of an Acting Chief Justice by the President when the office of the CJI is vacant or if the CJI is unable to perform their duties. While the senior-most available judge usually performs these duties, the appointment is made by the President. There is no provision that the President needs to obtain concurrence from a collegium of five senior-most Supreme Court judges for appointing an Acting CJI. The collegium system is primarily associated with the appointment and transfer of judges, not specifically the ad-hoc appointment of

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an Acting CJI under Article 126, which is an executive prerogative to ensure continuity.

35. Solution: b)

Statement 1 is correct. Starlink (SpaceX) and OneWeb (UK/India collaboration) are indeed prominent examples of LEO satellite constellations. Both are designed to provide high-speed, low-latency broadband internet services globally. LEO satellites orbit much closer to Earth (typically 500-2,000 km) compared to GEO satellites, which significantly reduces signal travel time (latency), making them better for interactive applications like video calls and online gaming.

Statement 2 is incorrect. LEO satellite internet constellations, especially those using higher frequency bands like Ka-band and V-band, are susceptible to weather-related signal disruptions. Heavy rain, snow, or severe storms can cause signal attenuation, a phenomenon known as "rain fade." While adaptive coding and modulation (ACM) techniques can help mitigate these effects to some extent by adjusting signal strength, they do not provide inherent immunity. C-band is more resilient to weather but offers lower speeds.

Statement 3 is correct. Inter-satellite links (ISLs), often using lasers (optical links) or radio waves, are a critical technology for advanced LEO constellations. These links allow satellites to communicate directly with each other, forming a mesh network in space. This enables data to be routed efficiently across the constellation, reducing the need for data to always travel down to a ground station and then back up. This enhances global coverage, reduces latency further, and improves the resilience of the network.

36. Solution: d)

Statement-I is incorrect. The Special 301 Report is an annual report issued by the United States Trade Representative (USTR), a federal agency of the U.S. government. It is not published by the World Trade Organization (WTO). The report assesses global intellectual property (IP) protection and enforcement from the perspective of U.S. interests and businesses. It is mandated by Section 182 of the U.S. Trade Act of 1974.

Statement-II is correct. India has indeed been consistently placed on the 'Priority Watch List' in the Special 301 Report. The reasons for this inclusion, as highlighted in the 2025 Report summary, include major concerns such as the vague interpretation of the Indian Patents Act (which has significant implications for pharmaceutical patents), weak enforcement against piracy and counterfeiting, lack of a robust framework for protecting trade secrets, and high customs duties on IPR-sensitive goods, including Information and Communication Technology (ICT), solar, and pharmaceuticals. These issues are perceived by the USTR as negatively affecting U.S. businesses.

37. Solution: d)

Statement 1 is incorrect. Bandhavgarh National Park is located in the Umaria district of Madhya Pradesh, nestled within the Vindhya ranges, not the Satpura ranges of Chhattisgarh. Its flora is dominated by dry deciduous forests, with Sal (Shorea robusta) being prominent in valleys, not moist evergreen forests.

Statement 2 is incorrect. "No major rivers flow through the park, but seasonal streams and rivulets support local biodiversity." Therefore, it is not bisected by a major river like the Narmada as its primary perennial water source. Furthermore, while Bandhavgarh is renowned for having the highest density of Royal Bengal Tigers in the world, the text does not make a similar claim for sloth bears. Key fauna mentioned includes tigers, chital, sambar, leopards, etc.

38. Solution: d)

Statement 1 is incorrect. The National Security Advisory Board (NSAB) was constituted in December 1998 by the Government of India. It is an advisory body and not a statutory body established through an Act of Parliament. It comprises experts from various fields outside the government who provide long-term strategic inputs on national security issues to the National Security Council (NSC).

Statement 2 is incorrect. The National Security Advisor (NSA) is the primary user of the advice tendered by the NSAB and heads the National Security Council Secretariat. However, the NSA does not serve as the ex-officio Chairman of the NSAB. The Chairman of the NSAB is appointed from among its members or can be a distinguished individual from outside the government with relevant expertise.

39. Solution: d)

Statement 1 is incorrect. The National Medical Register (NMR) is established under Section 31 of the National Medical Commission (NMC) Act, 2019. The NMC Act, 2019, replaced the Indian Medical Council Act, 1956.

Statement 2 is incorrect. Enrolment in the NMR is mandatory for all registered medical practitioners (RMPs) in India who hold an MBBS degree and are licensed to practice allopathic medicine, irrespective of whether they practice in government or private healthcare institutions.

Statement 3 is incorrect. The primary objectives of the NMR include creating a comprehensive and authentic digital registry of all licensed allopathic doctors, enhancing public trust, improving governance in the healthcare system, and facilitating better credential verification and policy planning. It is not designed to regulate the fee structures for medical consultations, which falls outside its current mandate.

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40. Solution: c)

The fundamental purpose of a wildlife corridor, especially for wide-ranging species like cheetahs, is to connect fragmented habitats. This connectivity is crucial for several ecological reasons. It allows animals to move naturally between different protected areas (like Kuno National Park, Gandhi Sagar Sanctuary, and Mukundara Hills Tiger Reserve in this case). Such movement facilitates dispersal to new territories, access to diverse food and water resources, and, critically for long-term survival, interbreeding between different sub-populations. This genetic exchange is vital for maintaining a healthy and resilient metapopulation, which is a group of spatially separated populations of the same species that interact at some level.

41. Solution: c)

Statement 2 is incorrect.

- Nano Sulphur plays multiple roles in agriculture due to its enhanced reactivity and nanoscale particle size, which improves absorption and efficacy.
- Statement 1 is correct – it acts as a broad-spectrum fungicide, effectively combating fungal pathogens such as powdery mildew and rust.
- Statement 3 is also correct, as sulphur is a vital micronutrient, essential for synthesizing amino acids, enzymes, and chlorophyll in plants.
- Statement 4 is correct as well, since Nano Sulphur can function as a biopesticide, disrupting pests' physiological processes, although its primary use remains as a fungicide and nutrient.
- However, Statement 2 is incorrect – Nano Sulphur does not serve as a nitrogen-fixing agent. Nitrogen fixation is a biological process typically carried out by certain bacteria (e.g., Rhizobium, Azotobacter) in association with leguminous plants, not by sulphur compounds.

42. Solution: b)

- The Next-Generation Health Management Information System (HMIS) for CGHS beneficiaries is a digitally advanced platform aimed at streamlining healthcare services under the Central Government Health Scheme (CGHS).
- One of its key features is PAN-based unique identification of beneficiaries. This measure is intended to ensure accurate tracking, avoid duplication, and enhance the efficiency of entitlement verification across departments and facilities.
- This system integrates several digital services, such as real-time tracking of card applications, online modification of CGHS cards, digital verification of contributions, and centralized data management for improved transparency and accessibility.
- It is part of the broader digitization and governance reforms under the National Digital Health Mission (NDHM).

43. Solution: d)

All three listed sources significantly contribute to PM10 (particulate matter ≤10 microns) pollution, making option d) the correct choice.

- Statement 1 is correct: Direct emissions from vehicles include primary PM10 particles such as soot, unburned hydrocarbons, and brake or tire dust. These are released directly into the atmosphere and inhalable due to their small size.
- Statement 2 is correct: Secondary PM10 particles form in the atmosphere through chemical reactions involving gases like sulfur dioxide (SO_2) and nitrogen oxides (NO_x). These gases undergo oxidation and react with ammonia and water vapor, forming sulfates and nitrates, which contribute to fine and coarse particulates including PM10.
- Statement 3 is correct: Wind-blown dust from construction sites, unpaved roads, and open soil surfaces directly contributes large quantities of coarse PM10 particles, especially in urban areas with active infrastructure projects and minimal dust control measures.

44. Solution: d)

- Under the United States Constitution and the Presidential Succession Act of 1947, if both the President and Vice President are unable to discharge the powers and duties of the office—due to death, resignation, removal, or incapacitation—the Speaker of the House of Representatives is next in line to assume the presidency.
- This succession plan ensures continuity of executive leadership in times of crisis. The Presidential Succession Act was enacted to clearly define the order of replacement beyond the Vice President. After the Speaker, the line of succession continues with the President Pro Tempore of the Senate, followed by Cabinet members beginning with the Secretary of State, based on the order in which their departments were established.
- The Chief Justice of the Supreme Court, although a high-ranking constitutional officer, is not part of the presidential line of succession.

45. Solution: a)

The Next-Generation Health Management Information System (HMIS) for CGHS is designed to enhance the efficiency, transparency, and user experience of the Central Government Health Scheme.

- Statement 1 is correct: By digitizing workflows, HMIS significantly improves service delivery and administrative efficiency, reducing delays in processing and enabling smoother coordination among CGHS wellness centres, dispensaries, and empanelled hospitals.
- Statement 2 is correct: The system introduces PAN-based unique identification, which helps eliminate duplicate entries and ensures that

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beneficiaries' entitlements are streamlined and accurately verified.

- Statement 3 is correct: The platform provides real-time digital access to health records, application status, and entitlements, empowering beneficiaries with timely and personalized information.
- Statement 4 is incorrect: While beneficiaries can select from empanelled hospitals, they do not enjoy complete autonomy. Their choice is still governed by CGHS policies, referral norms, and treatment eligibility criteria.

46. Solution: c)

- The SAARC Visa Exemption Scheme was launched in 1992 to promote people-to-people contact in South Asia. It does not give blanket visa-free travel to all citizens; instead, it provides special travel permits (visa stickers) to certain entitled categories of individuals (currently 24 categories, such as dignitaries, judges, parliamentarians, senior officials, journalists, sportspersons, etc.).
- Option (b) is incorrect because the scheme isn't limited to officials; it includes various civilian categories as well.
- Option (d) is wrong on the timeframe: the decision to create SVES was made in 1988 and it became operational in the early 1990s.
- Recently India suspended SVES privileges for Pakistani nationals after a terror attack).

47. Solution: b)

- The HAL Dhruv is a twin-engine Advanced Light Helicopter (ALH) designed and developed in India by Hindustan Aeronautics Limited (HAL). It is a multi-role utility helicopter, meaning it's used for transport, search-and-rescue, reconnaissance, medical evacuation, etc., rather than being a dedicated attack platform.
- This eliminates option (a), since Dhruv is not single-engine nor primarily an attack helicopter (India's attack helos are different models like the AH-64 Apache or HAL's Rudra/LCH which are derived from the Dhruv design).
- Option (c) is incorrect because Dhruv is not a heavy-lift chopper (heavy-lift examples would be the Mi-26 or CH-47 Chinook) and it wasn't jointly built with the USA – it was an indigenous project of India (with some foreign sub-systems).
- Option (d) is also wrong as Dhruv is a manned helicopter; HAL has worked on unmanned variants but the Dhruv itself is piloted.

48. Solution: a)

- Under the Indus Waters Treaty brokered by the World Bank, the Indus river system's waters were divided between India and Pakistan.
- Pakistan received unrestricted use of the three western rivers (Indus main stem, Jhelum, Chenab), whereas India got rights over the eastern rivers (Ravi, Beas, Sutlej).
- India is allowed limited use of the western rivers as well – for example, it can build run-of-river hydropower projects and use water for irrigation and domestic needs on those rivers, within strict design and storage limits. This means India can construct dams without large storage (to avoid affecting downstream flow) on western rivers, a fact affirmed by the treaty's technical provisions and arbitral decisions over projects like Kishanganga.
- Statement 3 is incorrect: the IWT has no provision for unilateral suspension or termination by one party. It is a permanent treaty; modifications or termination require mutual consent (and potentially arbitration).

49. Solution: b)

- Statement 1 is correct – the Kashmir Valley (the Vale of Kashmir) is a fertile valley through which the Jhelum River flows in a meandering course. The Jhelum is the main river draining the valley, collecting waters from various tributaries (such as the Lidder, Sind, etc.) before flowing out via the Baramulla gorge.
- Statement 2 is also correct. Pahalgam, a famous hill station in Anantnag district of J&K, lies at the confluence of two streams: one coming from Sheshnag Lake (along the route of the Amarnath Yatra) and the other being the main Lidder River flowing from the Kolahoi Glacier side. These streams meet at Pahalgam, which is at about 2130 m altitude. This confluence forms the Lidder River that continues through the Lidder Valley and eventually joins the Jhelum.
- Statement 3 is incorrect. The Kashmir Valley is bounded on the southwest by the Pir Panjal Range and on the northeast by the Great Himalayan Range.

50. Solution: a)

- The Sea of Marmara is a small inland sea entirely within Turkey. It serves as a connection between the Black Sea and the Aegean (Mediterranean) Sea: to its northeast, the Bosporus Strait links it to the Black Sea, and to its southwest, the Dardanelles Strait links it to the Aegean Sea.
- Geologically, Marmara lies on the North Anatolian Fault (NAF), a major active transform fault boundary between the Anatolian and Eurasian plates. As a result, this region experiences frequent earthquakes; in fact, the sea floor of Marmara is essentially an extension of this fault system, which has produced devastating quakes that have struck cities like Istanbul in the past. Hence, statement 3 is correct.
- Statement 4 is incorrect. The Sea of Marmara is actually quite small in area (about 11,350 km²). It is nowhere near one of the largest seas. Marmara's significance comes from its location, not size.

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51. Solution: b)

- Statement 1 is incorrect. The non-contact wearable device is designed to track molecular flux through the skin, measuring outward vapour (like water vapour, CO2, VOCs) and inward chemical entry. It does not primarily measure internal physiological parameters like heart rate or blood oxygen saturation in the conventional sense of oximeters or heart rate monitors.
- Statement 2 is correct. The device works by creating a sealed chamber adjacent to the skin, which forms a microclimate. This controlled environment allows its miniature sensors to accurately measure the flux of molecules like water vapour, carbon dioxide (CO2), and volatile organic compounds (VOCs) emanating from or entering the skin. A remote-controlled valve regulates the chamber's openness for comparative measurements.
- Statement 3 is correct. A key application of this technology is in monitoring wound healing, especially for conditions like diabetes where healing can be compromised, and for chronic skin conditions. Its non-invasive nature is particularly beneficial as it avoids damage to fragile or healing skin, while providing crucial data on skin barrier function and hydration. Other applications include dermatological diagnostics and tracking hazardous chemical exposure.

52. Solution: c)

- Statement 1 is incorrect. The ASI was founded in 1861 by Alexander Cunningham under a statute passed during the viceroyalty of Lord Canning. Lord Curzon, while indeed instrumental in passing the Ancient Monuments Preservation Act of 1904 and significantly contributing to heritage preservation, was not the Viceroy at the time of ASI's founding.
- Statement 2 is incorrect. The ASI operates under the Ministry of Culture, Government of India. It is a government agency, not an autonomous body directly under the PMO.
- Statement 3 is incorrect. The logo of the ASI is inspired by the Sanchi Stupa, particularly its gateways (toranas) and railings, symbolizing India's ancient architectural and archaeological legacy, not the Lion Capital of Ashoka.
- Statement 4 is correct. A core function of the ASI is the maintenance and restoration of ancient monuments and archaeological sites of national importance. It is responsible for over 3,600+ monuments notified under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

53.Solution: d)

- Statement 1 is incorrect. Paribhogika relics are objects used by Buddha, such as his robe, bowl, or walking stick. Physical bodily remains like bones, teeth, and ashes are classified as Saririka relics. Uddesika relics are symbols representing Buddha, like stupas or images.
- Statement 2 is incorrect. While the National Museum of India plays a crucial role in preserving and curating many Sacred Relics of Lord Buddha, it is not the sole custodian of all authenticated relics found globally. Major relics are housed in various locations worldwide, such as the Tooth Relic in Sri Lanka.
- Statement 3 is incorrect. The sharing of relics for international exposition is a collaborative effort. It is supported by the Ministry of Culture, Government of India, and the International Buddhist Confederation (IBC). The government's involvement is crucial for such diplomatic and cultural exchanges, as seen in the recent sharing of relics with Vietnam. Therefore, none of the statements are correct.

54. Solution: a)

- Statement 1 is correct. The report highlights that while the share of micro and small enterprises accessing formal credit rose from 14% in 2020 to 20% in 2024, and for medium enterprises from 4% to 9% in the same period, only 19% of the total MSME credit demand was met. This leaves a substantial credit gap of 80 lakh crore, indicating that the vast majority still struggle with formal credit access.
- Statement 3 is incorrect. The report "Enhancing MSMEs Competitiveness in India" was released by NITI Aayog in collaboration with the Institute for Competitiveness (IFC). This collaboration aimed to provide a comprehensive blueprint for MSME growth. Therefore, only one statement is correct.

55.Solution: a)

- Statement-I is correct. The Vizhinjam International Seaport is indeed strategically positioned to become a major transshipment hub. Its location just 10 nautical miles from key global shipping routes and its capacity to handle large vessels make it a direct competitor to established hubs like Colombo, Singapore, and Jebel Ali. This capability is expected to reduce India's reliance on these foreign ports for transshipment, thereby saving costs (estimated at over $200 million annually) and transit time for Indian cargo.
- Statement-II is correct. A key feature of Vizhinjam Port is its natural depth of 24 meters. This significant natural advantage means that extensive and costly capital dredging (deepening of the seabed) was not required to accommodate large vessels. This depth allows it to handle next-generation Ultra-Large Container Vessels (ULCVs) with capacities exceeding 24,000 TEUs.
- Furthermore, Statement-II is the correct explanation for Statement-I.

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56. Solution: a)

- Statement-I is correct. Certain Satavahana rulers, notably Yajna Sri Satakarni, issued coins featuring ship motifs. This numismatic evidence is widely interpreted by historians as indicative of the dynasty's active involvement in and promotion of maritime trade and navigation. Such imagery would symbolize their naval power or commercial interests across the seas.
- Statement-II is correct. The Krishna-Godavari delta region was a vital part of the Satavahana territory and was renowned for its fertility, particularly for rice cultivation. This strong agrarian base was fundamental to the empire's economy, providing sustenance for the population and generating surplus that could support other economic activities, including extensive inland and maritime trade.

Furthermore, Statement-II provides a correct explanation for Statement-I.

57. Solution: c)

- Statement 1 is incorrect. Palamu Tiger Reserve is located in the Chhotanagpur Plateau in Jharkhand. Its flora is dominated by Northern Tropical Dry Deciduous forests, with Sal (Shorea robusta) being a prominent species. Himalayan moist temperate forests and alpine meadows are characteristic of high-altitude Himalayan regions, not the Chhotanagpur Plateau.
- Statement 2 is incorrect. The Burha river, which drains the Palamu Tiger Reserve, is described as a perennial river, meaning it flows throughout the year. The North Koel and Auranga are other rivers in the area. Ephemeral rivers are those that flow only for short periods, typically after rainfall, which is not the case for the Burha as per the information.
- Statement 3 is correct. Gondwana formations (sandstone, shale, haematite) are present in the Palamu Tiger Reserve. The reserve also contains other rock types such as Gneiss, Quartzite, Amphibolite, and Laterite. This indicates a more diverse geological composition than stated.

58. Solution: d)

- Statement 1 is incorrect. According to the Protection of Human Rights Act, 1993 (as amended), the Chairperson of the NHRC can be a retired Chief Justice of India OR a retired Judge of the Supreme Court. The eligibility is not restricted solely to retired Chief Justices of India.
- Statement 2 is incorrect. The recommendations made by the NHRC are advisory and non-binding in nature. While they carry significant moral weight and public scrutiny often compels action, the concerned government or authority is not legally obligated to implement them. The NHRC can recommend compensation, legal action, or interim relief, but it cannot enforce these recommendations directly.
- Statement 3 is incorrect. The NHRC has a limitation regarding the timeframe for complaints. It cannot investigate cases of alleged human rights violations if the complaint is made after one year from the date on which the act constituting violation of human rights is alleged to have been committed. The limit is one year, not two years.

59. Solution: d)

- Statement-I is incorrect. While flood control is one of the benefits of the Bhakra Dam, it was conceived as a multi-purpose project with primary objectives including irrigation and hydroelectric power generation for several states like Punjab, Haryana, and Rajasthan, in addition to flood control and providing drinking water.
- Statement-II is correct. The Sutlej River is indeed a trans-Himalayan river, originating in Tibet from Lake Rakshastal near Mount Kailash, at a high elevation. Such rivers, fed by glaciers and snowmelt from high-altitude lakes and mountain ranges, tend to have a more consistent and perennial flow compared to rain-fed rivers. This characteristic makes them highly suitable for the development of large-scale multi-purpose river valley projects like the Bhakra-Nangal Project, as they provide a reliable water source throughout the year for power generation, irrigation, and other uses.

60. Solution: b)

- Statement 1 is incorrect. WAVES (World Audio Visual Entertainment Summit) is an initiative by the Ministry of Information & Broadcasting that covers a broad spectrum of the audio-visual entertainment sector. This includes film, OTT platforms, VFX, animation, and music, not exclusively Indian classical music and dance. Its scope is much wider, aiming to connect global players across various media.
- Statement 2 is correct. A key objective of WAVES is to enable structured B2B transactions and content deals. It connects content creators with investors, buyers, and collaborators from around the world, aiming to facilitate cross-border collaboration in the media and entertainment industry. The report of WAVES 2025 facilitating significant deals underscores this objective.

61. Solution: c)

Statement-I is correct. Automatic Number Plate Recognition (ANPR) systems significantly enhance road tax compliance by automatically identifying vehicles that haven't paid their dues. They also aid in traffic law enforcement by detecting vehicles involved in violations like speeding, running red lights, or unauthorized parking. This automation streamlines the

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process for authorities and improves overall adherence to traffic regulations.

Statement-II is incorrect. While blockchain technology offers potential benefits for secure and immutable data storage, current ANPR systems do not primarily rely on blockchain-based registries for vehicle identification. Instead, they typically utilize conventional centralized or cloud-based databases, such as India's VAHAN database, which store vehicle registration information linked to license plate numbers. ANPR systems capture license plate images and cross-reference them with these established databases for verification and enforcement actions.

62. Solution: a)

Statement 1 is incorrect. While it's true that GNSS signals can be weakened or blocked in tunnels and under dense foliage, modern GNSS-based tolling systems often integrate with other technologies like Inertial Measurement Units (IMUs) or roadside beacons. IMUs can provide positioning data when GNSS signals are temporarily unavailable, and roadside units can act as supplementary positioning references, ensuring continuous tracking and toll collection even in challenging environments.

Statement 2 is incorrect. The primary function of GNSS in tolling is to track the distance a vehicle travels on tolled roads for billing purposes. While the underlying technology could potentially be integrated with systems providing real-time traffic information, GNSS tolling itself is not inherently designed to offer drivers real-time feedback on road conditions, such as accidents or congestion. This kind of information is typically provided by Intelligent Transportation Systems (ITS) or Vehicle-to-Everything (V2X) communication technologies.

Statement 3 is correct. GNSS is an umbrella term encompassing various global satellite navigation systems like GPS (USA), GLONASS (Russia), Galileo (EU), and BeiDou (China). Modern On-Board Units (OBUs) used for GNSS tolling are increasingly designed to be compatible with multiple GNSS constellations. This multi-constellation capability enables seamless interoperability for tolling across different countries that may primarily rely on different satellite systems, facilitating smoother cross-border travel and toll collection.

63. Solution: c)

Statement 1 is incorrect—KVIC was created under a Parliamentary Act, not under the Planning Commission. It predates the formal integration of Khadi initiatives into central planning processes.

Statement 2 is correct—KVIC plays a central role in supplying raw materials to artisans and offers training through various departmental and non-departmental centers, thereby improving production and skill development.

Statement 3 is correct—research and innovation are emphasized by KVIC, particularly focusing on renewable and non-conventional energy to enhance productivity in rural industries. These R&D efforts are crucial for sustainability and cost-effectiveness in decentralized production models.

Statement 4 is correct. KVIC actively engages in marketing, brand promotion, and sales facilitation through tie-ups with online platforms, exhibitions, and Khadi stores to support rural entrepreneurs.

64. Solution: b)

Statement 1 is incorrect. The HEALD initiative, which stands for "Holistic Approach to Liver Disease," primarily focuses on a comprehensive strategy for liver health encompassing prevention, early detection, management, and creating awareness about various liver diseases. It does not have a mandate to promote or subsidize liver transplant surgeries. While liver transplants are a critical intervention for end-stage liver disease, they fall outside the core objectives of HEALD as currently understood.

Statement 2 is correct. A key aim of the HEALD initiative is to integrate liver health into national health policies and programs. This involves advocating for the inclusion of liver disease prevention and management strategies within broader public health frameworks, ensuring that liver health receives adequate attention and resources at the national level.

Statement 3 is correct. Community outreach is a significant component of the HEALD initiative, with a particular focus on reaching underprivileged and vulnerable populations. These communities often face higher risks of liver disease due to factors like poor sanitation, limited access to healthcare, and nutritional deficiencies.

HEALD's outreach programs aim to raise awareness, conduct screenings, and provide essential information and support to these underserved groups. The Institute of Liver and Biliary Sciences (ILBS) is the implementing agency for this initiative, emphasizing its commitment to public health and community engagement.

65. Solution: b)

Statement 1 is correct—languages included in the Eighth Schedule are permitted as mediums of examination in UPSC and other public service recruitment.

Statement 2 is correct – Sanskrit is indeed one of the 22 languages listed in the Eighth Schedule.

Statement 3 is incorrect—inclusion does not automatically mandate educational use. Language policy in education is determined by the states and NEP guidelines, not directly by Schedule inclusion.

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Statement 4 is incorrect—English is not part of the Eighth Schedule; it is an official language under Article 343, but not a scheduled language.

About the Eighth Schedule of the Constitution:

What is the Eighth Schedule?

- The Eighth Schedule of the Constitution of India lists the languages recognized by the Constitution for official purposes.
- Constitutional references: Article 344(1) and Article 351.

Languages Included: Currently contains 22 languages, including Hindi, Bengali, Assamese, Urdu, Tamil, Telugu, and Bodo.

History:

- Originally, 14 languages were included at the time of adoption in 1950.

Later additions:

- Sindhi (1967)
- Konkani, Manipuri, Nepali (1992)
- Bodo, Dogri, Maithili, Santhali (2004).

Benefits of Inclusion:

- Constitutional recognition at the national level.
- Enhanced government support for language promotion and preservation.
- Eligibility for official use in exams like UPSC and public administration.
- Boosts cultural pride, literary development, and language education.

66. Solution: a)

Statement I explains what happens—electricity is generated at night.

Statement II explains how—via thermoelectric generators, which convert the temperature gradient created by radiative cooling into a small electric current.

This technology is a breakthrough for night-time energy harvesting and serves as a promising enhancement to solar infrastructure.

About Moonlight Solar Panels Technology:

What it is?

- A new technology that enables solar panels to generate electricity during nighttime and under low-light conditions.

How It Works?

- Utilizes radiative cooling, a natural process where heat radiates from the Earth's surface into space, especially on clear nights.
- Thermoelectric generators are attached to modified solar panels to capture the heat dissipating from the panels and convert it into electricity.
- This method taps the temperature difference between the panel and the surrounding air to produce energy.

Key Features:

- Generates about 50 milliwatts per square meter at night (compared to 200 watts per square meter during the day by traditional panels).
- Can power small devices like LEDs, environmental sensors, and IoT gadgets.
- Retrofit-friendly: Can be integrated into existing solar panel installations without the need for complete replacement.

67. Solution: b)

The primary objective of sending tardigrades to the International Space Station as part of the Axiom-4 mission is to study their revival and reproduction in microgravity and to uncover the molecular mechanisms that contribute to their remarkable resilience in extreme conditions, including the harsh environment of space. This research can provide insights for biotech innovations and astronaut protection strategies for long-duration space missions.

About Axiom-4 Mission:

What it is:A 14-day crewed mission to the International Space Station (ISS) under the Axiom Space program, involving research in microgravity biology, biotechnology, and sustainability.

Organizations Involved:Joint initiative by ISRO (India), NASA (USA), and ESA (Europe), with astronaut Group Captain Shubhanshu Shukla representing India.

Mission Objectives:

- Explore life science, space agriculture, and human physiological responses.
- Assess microbial resilience, muscle regeneration, and food growth in zero gravity.
- Contribute towards India's Gaganyaan Mission and future long-duration spaceflight.

68. Solution: b)

While Nano Sulphur has a wide range of applications, including in agriculture as a fungicide and fertilizer, biomedical applications like drug delivery, and energy storage in lithium-sulfur batteries, it is not typically used in the production of high-strength construction materials like cement. Traditional materials and chemical additives are used to enhance the strength and properties of cement.

What is Nano Sulphur?

- A nano-formulation of sulphurapplied via foliar spray to improve nutrient uptake and crop yield.
- It uses plant-growth promoting bacteriafor eco-friendly, enzyme-driven nutrient delivery.

Developed by: The Energy and Resources Institute (TERI).

Key Features:

- Enhances yield:Boosts mustard production by 30–40% (up to 3.7 tonnes/ha).
- Increases oil content:Raises oil content by 28–30%.
- Replaces 50% traditional sulphur:Cuts input cost

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and dependency on bulky sulphur fertilisers.
- Efficient absorption:90–100% availability through foliar application vs. 10–15% in conventional forms.
- Non-leaching:Prevents nutrient loss in sandy or compact soils.

69. Solution: c)

Long-term exposure to PM10 pollution is linked to exacerbation of respiratory illnesses like asthma and bronchitis (1), increased risk of cardiovascular diseases (2), and impaired lung growth in children (3). While short-term exposure can trigger allergies, (4) development of skin allergies is not a primary long-term health impact directly associated with PM10 pollution.

About PM10 Pollution in India:

What is PM10?

- PM10 refers to particulate matter with a diameter of 10 microns or less, capable of entering the respiratory tract.
- It includes dust, pollen, mold, and emissions from vehicles, industries, and construction activities.

Characteristics of PM10:

- Contains inorganic compounds, heavy metals, and biological material.
- Includes both primary particles (directly emitted) and secondary particles (formed through chemical reactions in the air).
- Sources include vehicular emissions, construction, industrial activities, stubble burning, and waste combustion.

Permissible Limits in India:

- As per National Ambient Air Quality Standards (NAAQS) by CPCB:
- Annual Average: 60 µg/m³
- 24-Hour Average: 100 µg/m³

Impacts of PM10:

- Respiratory Issues: Inhalation leads to asthma, bronchitis, and chronic obstructive pulmonary disease exacerbation.
- Cardiovascular Damage: Long-term exposure linked to heart disease and strokes.
- Impaired Lung Growth: Children exposed to PM10 show reduced lung function development.
- Environmental Damage: Reduces visibility, affects plant health, and damages buildings.
- Increased Mortality Risk: IARC classified outdoor air pollution (PM inclusive) as carcinogenic in 2015.

70. Solution: a)

The exceptional survival abilities of water bears are attributed to their capacity to undergo anhydrobiosis (1) and the presence of unique proteins that protect their DNA from damage, including radiation (2). While they can adapt, their reproductive cycle is not exceptionally rapid (3), and they are microscopic in size (4), offering no buffer due to large size.

About Tardigrades (Water Bears):

What are Tardigrades?

- Micro-animals also known as "water bears" or "moss piglets".
- Size: Between 0.3 to 0.5 mm, visible only under a microscope.
- Discovered in 1773 by German zoologist Johann Goeze.

Key Characteristics:

- Found in extreme habitats — from polar ice caps to deep oceans.
- Have eight legs with claws, segmented bodies, and tough outer skin.
- Survive extreme conditions: vacuum of space, radiation, dehydration, and high/low temperatures.
- Enter a cryptobiosis state (suspended animation) to survive harsh environments.

71. Solution: a)

- Statement 1 is incorrect. The Satavahana administrative framework had elements of decentralization. They had a three-tier feudatory system (Raja, Mahabhoja, Senapati) ensuring localized governance. Moreover, Senapatis (military chiefs) were appointed as provincial governors, blending civil and military administration, particularly in tribal regions. This suggests a degree of delegated authority rather than extreme centralization.
- Statement 2 is incorrect. The Satavahana economy had a strong agrarian base, particularly in the fertile Krishna-Godavari delta which was a major rice-producing zone. They also had rich mineral resources like iron (Warangal) and gold (Kolar). Furthermore, they thrived through extensive inland and maritime trade routes, as evidenced by their coinage (including ship motifs) and archaeological findings of trade goods. Their economy was thus diverse and not predominantly pastoral.
- Statement 3 is correct. The Satavahanas are noted for being among the earliest Indian rulers to grant tax-exempt lands (agrahāras or brahmadeyas) to Brahmins and Buddhist monks. This practice was aimed at promoting religion, education, and agricultural expansion. These land grants, often carrying administrative and judicial immunities, are considered by many historians to be precursors to later Indian feudal developments, as they created intermediaries with rights over land and revenue.

72. Solution: c)

Statement-I is correct. The traditional classification of Lord Buddha's relics into three categories – Saririka (physical remains like bones, teeth), Paribhogika (objects used by Buddha like his robe or bowl), and Uddesika (symbols representing Buddha like stupas,

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images) – is a comprehensive system that covers the various types of revered items associated with his life, presence, and teachings. These categories help in understanding the different forms of veneration.

Statement-II is incorrect. While Saririka relics are indeed highly sacred as they are direct physical remains of the Buddha, the assertion that they are exclusively housed in stupas constructed by Emperor Ashoka is inaccurate. Many Saririka relics are enshrined in stupas built at different times by various patrons and communities across the Buddhist world, not just those by Ashoka. Moreover, some important relics are housed in temples and monasteries, such as the Tooth Relic in Kandy, Sri Lanka.

73. Solution: b)

- Statement 1 is incorrect. The NHRC has the power to inquire into complaints of human rights violations or negligence by public servants suo motu (on its own initiative) or on a petition presented to it by a victim or any person on his behalf. It is not restricted to acting only upon formal petitions.
- Statement 2 is correct. The composition of the NHRC includes ex-officio members, who are the Chairpersons of various National Commissions. These include the Chairperson of the National Commission for Scheduled Castes, National Commission for Scheduled Tribes, National Commission for Women, National Commission for Minorities, National Commission for Backward Classes, and the Chief Commissioner for Persons with Disabilities.
- Statement 3 is incorrect. While the NHRC can recommend relief or compensation to victims of human rights violations, its recommendations are not legally binding and are not directly enforceable as a court decree. It can recommend to the concerned government or authority to make payment of compensation or damages, but it does not have the power to award it directly in an enforceable manner. The government has to act upon these recommendations.

74. Solution: d)

Stratospheric airships can wait over a specific area for extended periods (weeks or even months), providing persistent surveillance similar to a geostationary satellite but with greater flexibility for repositioning and at a potentially lower operational cost. This "pseudo-satellite" capability allows for continuous monitoring, which is a distinct advantage over orbiting satellites that have fixed revisit times for a given location (unless geostationary, which are very high and expensive).

75. Solution: b)

- Statement 1 is incorrect. The Biodiversity Benefit Sharing Regulations, 2025, establish turnover-based slabs for benefit sharing. Users with an annual turnover of up to Rs 5 crore are exempt from benefit sharing. For those with turnover between Rs 5 crore and Rs 50 crore, the sharing is 0.2%; for Rs 50-250 crore, it's 0.4%; and above Rs 250 crore, it's 0.6% of the annual gross ex-factory sale price. There is no flat 0.5% minimum for all users.
- Statement 2 is correct. The regulations, aligning with the Biological Diversity (Amendment) Act, 2023, exempt users of cultivated medicinal plants from benefit sharing obligations. The amendments also aimed to ease compliance for AYUSH practitioners.

76. Solution: c)

- Statement 1 is correct. The 'Khelo India – National Programme for Development of Sports' was launched with the twin objectives of mass participation and promotion of excellence across the country. The scheme has been revised and extended for five years, from 2021-22 to 2025-26.
- Statement 2 is correct. The Khelo India Scheme (2021-22 to 2025-26) comprises five components: Creation and Upgradation of Sports Infrastructure, Sports Competitions and Talent Development, Khelo India Centres and Sports Academies, Fit India Movement, and Promotion of Inclusiveness through Sports.
- Statement 3 is correct. Talented athletes identified under the Khelo India Scheme are eligible for annual financial assistance/scholarship. For instance, selected Khelo India Athletes receive an out-of-pocket allowance (e.g., 1,20,000 per annum) and additional support (e.g., 5 lakh per annum) towards training, equipment, diet, and education. Therefore, statements 1, 3, and 4 are correct.

77. Solution: c)

The ECINET platform is designed by the Election Commission of India (ECI) as a new user-friendly digital interface. A key benefit is to integrate and reorient over 40 of ECI's existing mobile and web applications into a single platform. This move is specifically designed to alleviate the burden on users from downloading and navigating multiple applications and remembering different logins, thereby simplifying access to electoral services and information.

78. Solution: a)

- Statement 1 is incorrect. The founder of the Badami Chalukya dynasty was Pulakesin I (543–566 CE), not Vikramaditya I. Pulakesin I is also the one credited with performing the Ashvamedha Yajna. Vikramaditya I was the son of Pulakesin II.
- Statement 2 is correct. Vikramaditya I (644–681 CE) is renowned for reclaiming Vatapi (Badami) from the Pallavas. The Pallava king Narasimhavarman I had captured Badami after

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defeating Pulakesin II. Vikramaditya I's military campaigns were crucial in restoring Chalukya power and reunifying their fractured empire.

- Statement 3 is incorrect. The Badami Chalukyas, including Vikramaditya I, generally supported various religious faiths including Shaivism, Vaishnavism, Shaktism, and Jainism. Vikramaditya I and other rulers are known to have made donations to Jain establishments, indicating a policy of religious tolerance rather than suppression.

79. Solution: a)

- Statement 1 is incorrect. The Aadhaar-based Face Authentication PoC for NEET-UG 2025 was a collaborative effort by the Unique Identification Authority of India (UIDAI), National Informatics Centre (NIC), and National Testing Agency (NTA). Crucially, it used Aadhaar-linked face authentication, performing real-time matching via the Aadhaar biometric database, not a standalone NTA software.
- Statement 2 is correct. A primary objective of conducting this PoC was to strengthen exam security and prevent impersonation by verifying candidates in real-time using Aadhaar-linked face authentication. The system aimed to ensure high accuracy in face matching and streamline entry protocols.
- Statement 3 is incorrect. While the initial conception of Aadhaar emphasized its role in delivering subsidies and benefits, the Aadhaar Act, 2016, and subsequent amendments and rules have allowed for its use in various other contexts for authentication purposes, subject to legal provisions and regulations. The use for exam security, as demonstrated by the PoC, is one such emerging application aimed at good governance, and the Aadhaar Authentication for Good Governance Amendment Rules, 2025, further expand its use.

80. Solution: d)

- Statement I is incorrect. The Nabakalebara ritual is not performed annually. It is a special and infrequent ritual that takes place to replace the wooden idols of the deities. It is conducted every 12 or 19 years, based on the Hindu lunar calendar when a specific astrological configuration occurs (an extra Asadha month, or Adhimasa). While a Rath Yatra follows the Nabakalebara, it is not an annual part of the regular Rath Yatra.
- Statement II is correct. A crucial part of the Nabakalebara ritual, after the transfer of the 'Brahma Padartha' to the new idols, is the ceremonial burial of the old idols. These old wooden forms of the deities are buried with due reverence in a designated sacred place within the Jagannath Temple premises in Puri, known as Koili Baikuntha. This act symbolizes the cyclical nature of creation, existence, and dissolution, akin to rebirth in Hindu philosophy.

81. Solution: b)

The Energy Conservation Act, 2022 Amendment plays a crucial role in bolstering India's domestic carbon market by creating a robust framework for trading carbon credits and promoting energy efficiency across sectors.

This initiative aligns with India's Nationally Determined Contributions (NDCs) under the Paris Agreement, which include achieving a 45% reduction in emission intensity of GDP by 2030 compared to 2005 levels.

However, while the amendment supports the broader goals of the NDCs, its primary focus lies in facilitating energy conservation and establishing the carbon market infrastructure. The emission intensity reduction is a more comprehensive target, encompassing various policies and measures beyond the amendment itself.

Thus, while both statements are correct, Statement-II does not exclusively explain Statement-I, as the latter is part of a broader spectrum of measures aimed at meeting India's climate commitments.

82. Solution: d)

The Contempt of Courts Act, 1971, safeguards the judiciary's independence by penalizing actions that undermine its authority or interfere with the administration of justice.

What is Judicial Accountability?

Judicial accountability refers to the principle that judges must take responsibility for their decisions and actions. It ensures transparency in decision-making and mandates judges to act within the framework of the law, upholding the trust vested in them by society.

Provisions for Judicial Accountability:

Constitutional Provisions:

Article 124(4) and 124(5):Allows impeachment of Supreme Court judges for proven misbehavior or incapacity.

Article 217:Impeachment of High Court judges based on similar grounds.

Article 235:Empowers High Courts to control and supervise subordinate courts.

Restatement of Judicial Values (1997):Acts as a code of conduct for higher judiciary members.

83. Solution: a)

Statement 1 is correct as Articles 124(4) and 124(5) outline the impeachment process for Supreme Court judges.

Statement 2 is also correct as the Judges (Inquiry) Act, 1968, provides a mechanism to investigate judicial misconduct.

Statement 3 is incorrect because the Restatement of Judicial Values, 1997, is a code of conduct but not legally binding.

What is Judicial Accountability?

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Judicial accountability refers to the principle that judges must take responsibility for their decisions and actions. It ensures transparency in decision-making and mandates judges to act within the framework of the law, upholding the trust vested in them by society.

Legal Provisions:

Judges (Inquiry) Act, 1968:Establishes a mechanism to investigate misconduct through a three-member panel.

Contempt of Courts Act, 1971:Ensures that judiciary functions independently without undue influence.

Judicial Standards and Accountability Bill (pending):Aims to enhance transparency in judicial conduct and strengthen oversight mechanisms.

84. Solution: b)

Statement 1 is correct as road transport contributes 66% of logistics in India.

Statement 2 is correct since waterways are cost-effective for heavy goods.

Statement 3 is incorrect because rail is suited for bulk goods and long-haul transportation, not short-haul.

Modes of Logistics Movements in India:

- Road:Largest contributor, with 66% share; key for short-haul and last-mile delivery.
- Rail:31% share, suited for bulk goods and long-haul transportation; expanding with dedicated freight corridors.
- Waterways:3% share; cost-effective for heavy goods; potential for coastal and inland navigation.
- Air: 1% share; critical for high-value, time-sensitive goods.

85. Solution: b)

The PM Gati Shakti program is an initiative aimed at transforming India's infrastructure landscape by integrating multi-modal transportation systems and fostering seamless connectivity across various sectors.

Statement 1 is correct as it highlights the program's goal of creating a unified infrastructure network that includes roads, railways, ports, and other modes of transport.

Statement 3 is also correct because the program emphasizes improved coordination among stakeholders, such as government agencies and private entities, to avoid delays and optimize resource allocation in infrastructure projects.

However, Statement 2 is incorrect because PM Gati Shakti is not limited to rural road networks; it adopts a comprehensive approach, focusing on the development of transportation and logistics infrastructure across urban and rural areas.

86. Solution: b)

WHO Priority List of Pathogens:

- Purpose:Focus global efforts on diseases with high epidemic potential and insufficient medical countermeasures.
- Pathogens Listed:Includes Ebola, Marburg, Lassa fever, Nipah, Rift Valley fever, Zika, and Disease X.
- Criteria:High mortality, rapid spread, and lack of vaccines or treatments.

Patterns of Emerging Diseases:

- Zoonotic Origins:About 70% of emerging diseases come from animals.
- Environmental Factors:Deforestation, urban sprawl, and intensive agriculture increase risks.
- Globalization:Interconnected travel and trade amplify local outbreaks into pandemics.
- Undiscovered Threats:Over 1.7 million unknown viruses in wildlife could infect humans.

87. Solution: d)

The Carter Doctrine was announced by then U.S. President Jimmy Carter in his 1980 State of the Union Address, primarily in response to the Soviet invasion of Afghanistan in 1979. This event significantly heightened Cold War tensions and raised alarm in the United States about the Soviet Union's potential to expand its influence into the strategically critical Persian Gulf region, which is rich in oil resources.

The doctrine declared that any attempt by an external force to gain control of the Persian Gulf would be viewed as an assault on the vital interests of the United States, warranting a military response. This policy underscored the U.S. commitment to protecting its energy supplies and countering Soviet aggression in the region.

88. Solution: c)

Rocket launches using chlorine-based propellants significantly deplete the ozone layer.

However, black carbon, released during launches, has a much greater warming potential than carbon dioxide, absorbing sunlight 500 times more efficiently. Hence, Statement-I is correct, but Statement-II is incorrect.

89. Solution: c)

ESA's ClearSpace-1 mission is a pioneering initiative in active debris removal, aiming to tackle the growing issue of space debris threatening operational satellites and future space missions. What sets it apart is its targeted approach to removing a single large piece of debris, specifically a defunct payload adapter left in orbit after a 2013 Vega launch. Using a robotic spacecraft equipped with four articulated arms, the mission will capture the debris and safely guide it for a controlled atmospheric re-entry.

Unlike other conceptual or theoretical solutions, ClearSpace-1 focuses on real-world implementation to demonstrate the feasibility of debris removal technologies. It highlights the importance of cleaning up Earth's orbits to ensure the sustainability of space activities.

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90. Solution: d)

Dissent in the judiciary plays a crucial role in enriching democratic and legal discourse by offering alternate interpretations of the law. It allows judges to voice differing opinions, fostering a culture of critical analysis and deliberation within the judicial system. While majority opinions hold legal authority, dissenting judgments often highlight potential flaws, explore overlooked aspects, or predict future legal developments. Such opinions can influence future cases, provide guidance for legislative improvements, and preserve a record of diverse perspectives for posterity.

By challenging the prevailing consensus, dissent ensures that judicial reasoning is robust and inclusive of minority viewpoints, preventing conformity that might overlook essential nuances. It also serves as a safeguard against potential judicial errors and reinforces the independence of the judiciary.

91. Solution: d)

Statement 1 is incorrect. China's "nine-dash line" (or more recently, a "ten-dash line" including Taiwan) claim encompasses almost the entirety (roughly 90%) of the South China Sea, not just 50%. Furthermore, this claim was largely invalidated by a 2016 arbitral tribunal ruling under UNCLOS, a ruling that China refuses to recognize. It is not largely accepted under UNCLOS.

Statement 2 is incorrect. The Paracel Islands are primarily claimed by China, Taiwan, and Vietnam. China currently controls them in their entirety after seizing them from South Vietnam in 1974. The Philippines and Malaysia are major claimants in the Spratly Islands dispute, not primarily the Paracels, and China is an assertive claimant, not a mediator, in the Paracel dispute.

Statement 3 is incorrect. The China Sea Basin is the deepest part of the South China Sea, with depths reaching up to approximately 5,016 meters. The Sunda Shelf is a broad, shallow continental shelf connecting the South China Sea to the Gulf of Thailand and Java Sea; it is not the deepest part. While hydrocarbon exploration occurs in various parts of the South China Sea, including areas overlying the Sunda Shelf, the statement incorrectly identifies the Sunda Shelf as the deepest part.

92. Solution: a)

Statement 1 is incorrect. The Green Hydrogen Certification Scheme of India (GHCI) was launched by the Ministry of New and Renewable Energy (MNRE), not the Ministry of Power. The Bureau of Energy Efficiency (BEE) is designated as the Nodal Agency for the scheme, responsible for its implementation and oversight. The actual certification will be carried out by Accredited Carbon Verification (ACV) Agencies.

Statement 2 is correct. A key objective of the GHCI is to certify hydrogen as "green" based on its emissions intensity. This involves defining a specific greenhouse gas (GHG) emission threshold that must be met during the production process. The metric used is kilograms of carbon dioxide equivalent per kilogram of hydrogen (kg CO_2 eq/kg H_2). Hydrogen produced must meet this benchmark, ensuring it is derived exclusively from renewable energy sources, to qualify for green certification.

Statement 3 is incorrect. The scope of the GHCI is project-level certification that extends up to the point of hydrogen purification. It explicitly excludes the transportation and storage phases of the hydrogen lifecycle. While traceability is a goal, the current certification framework focuses on the production process itself.

Statement 4 is incorrect. Compliance with the GHCI is mandatory for all domestic hydrogen producers who wish to label their product as "green" for use within India. However, the scheme provides an exemption for units that are producing hydrogen exclusively for export purposes. This distinction is important for facilitating India's green hydrogen export ambitions while ensuring credibility in the domestic market.

93. Solution: c)

he Red-Crowned Roofed Turtle (Batagur kachuga) is listed as Critically Endangered on the IUCN Red List, signifying an extremely high risk of extinction in the wild. This is its current global protection status.

Among the primary threats, habitat degradation is a major factor. This includes pollution of their riverine habitats, disturbances from dam construction which alter river flow and sediment dynamics, and excessive water abstraction. Specifically, sand mining on riverbanks and farming on these banks destroy their critical nesting sites, as these turtles require sandy beaches or sandbars to lay their eggs. Poaching for meat and shells is another severe threat.

94. Solution: d)

Statement 1 is incorrect. The eligibility criteria for appointment as a Judge of the Supreme Court (and thus, by extension, for the CJI who is appointed from amongst these judges) are: being a citizen of India, and having served as a Judge of a High Court for at least five years (not ten), or having been an advocate in a High Court for at least ten years (not five), or being a distinguished jurist in the opinion of the President. The statement reverses the required years of service for a High Court judge and an advocate.

Statement 2 is incorrect. The Constitution of India does not prescribe a fixed tenure for the office of the Chief Justice of India. A CJI, like other Supreme Court judges, holds office until they attain the age of

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65 years, as per Article 124(2) of the Constitution. The actual length of their tenure as CJI depends on their age at the time of appointment to this specific office.

Statement 3 is incorrect. Article 126 of the Constitution provides for the appointment of an Acting Chief Justice by the President when the office of the CJI is vacant or if the CJI is unable to perform their duties. While the senior-most available judge usually performs these duties, the appointment is made by the President. There is no provision that the President needs to obtain concurrence from a collegium of five senior-most Supreme Court judges for appointing an Acting CJI. The collegium system is primarily associated with the appointment and transfer of judges, not specifically the ad-hoc appointment of an Acting CJI under Article 126, which is an executive prerogative to ensure continuity.

95. Solution: b)

Statement 1 is correct. Starlink (SpaceX) and OneWeb (UK/India collaboration) are indeed prominent examples of LEO satellite constellations. Both are designed to provide high-speed, low-latency broadband internet services globally. LEO satellites orbit much closer to Earth (typically 500-2,000 km) compared to GEO satellites, which significantly reduces signal travel time (latency), making them better for interactive applications like video calls and online gaming.

Statement 2 is incorrect. LEO satellite internet constellations, especially those using higher frequency bands like Ka-band and V-band, are susceptible to weather-related signal disruptions. Heavy rain, snow, or severe storms can cause signal attenuation, a phenomenon known as "rain fade." While adaptive coding and modulation (ACM) techniques can help mitigate these effects to some extent by adjusting signal strength, they do not provide inherent immunity. C-band is more resilient to weather but offers lower speeds.

Statement 3 is correct. Inter-satellite links (ISLs), often using lasers (optical links) or radio waves, are a critical technology for advanced LEO constellations. These links allow satellites to communicate directly with each other, forming a mesh network in space. This enables data to be routed efficiently across the constellation, reducing the need for data to always travel down to a ground station and then back up. This enhances global coverage, reduces latency further, and improves the resilience of the network.

96. Solution: d)

Statement-I is incorrect. The Special 301 Report is an annual report issued by the United States Trade Representative (USTR), a federal agency of the U.S. government. It is not published by the World Trade Organization (WTO). The report assesses global intellectual property (IP) protection and enforcement from the perspective of U.S. interests and businesses. It is mandated by Section 182 of the U.S. Trade Act of 1974.

Statement-II is correct. India has indeed been consistently placed on the 'Priority Watch List' in the Special 301 Report. The reasons for this inclusion, as highlighted in the 2025 Report summary, include major concerns such as the vague interpretation of the Indian Patents Act (which has significant implications for pharmaceutical patents), weak enforcement against piracy and counterfeiting, lack of a robust framework for protecting trade secrets, and high customs duties on IPR-sensitive goods, including Information and Communication Technology (ICT), solar, and pharmaceuticals. These issues are perceived by the USTR as negatively affecting U.S. businesses.

97. Solution: d)

Statement 1 is incorrect. Bandhavgarh National Park is located in the Umaria district of Madhya Pradesh, nestled within the Vindhya ranges, not the Satpura ranges of Chhattisgarh. Its flora is dominated by dry deciduous forests, with Sal (Shorea robusta) being prominent in valleys, not moist evergreen forests.

Statement 2 is incorrect. "No major rivers flow through the park, but seasonal streams and rivulets support local biodiversity." Therefore, it is not bisected by a major river like the Narmada as its primary perennial water source. Furthermore, while Bandhavgarh is renowned for having the highest density of Royal Bengal Tigers in the world, the text does not make a similar claim for sloth bears. Key fauna mentioned includes tigers, chital, sambar, leopards, etc.

98. Solution: d)

Statement 1 is incorrect. The National Security Advisory Board (NSAB) was constituted in December 1998 by the Government of India. It is an advisory body and not a statutory body established through an Act of Parliament. It comprises experts from various fields outside the government who provide long-term strategic inputs on national security issues to the National Security Council (NSC).

Statement 2 is incorrect. The National Security Advisor (NSA) is the primary user of the advice tendered by the NSAB and heads the National Security Council Secretariat. However, the NSA does not serve as the ex-officio Chairman of the NSAB. The Chairman of the NSAB is appointed from among its members or can be a distinguished individual from outside the government with relevant expertise.

99. Solution: d)

Statement 1 is incorrect. The National Medical Register (NMR) is established under Section 31 of the National Medical Commission (NMC) Act, 2019. The NMC Act, 2019, replaced the Indian Medical Council Act, 1956.

Statement 2 is incorrect. Enrolment in the NMR is

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mandatory for all registered medical practitioners (RMPs) in India who hold an MBBS degree and are licensed to practice allopathic medicine, irrespective of whether they practice in government or private healthcare institutions.

Statement 3 is incorrect. The primary objectives of the NMR include creating a comprehensive and authentic digital registry of all licensed allopathic doctors, enhancing public trust, improving governance in the healthcare system, and facilitating better credential verification and policy planning. It is not designed to regulate the fee structures for medical consultations, which falls outside its current mandate.

100. Solution: c)

The fundamental purpose of a wildlife corridor, especially for wide-ranging species like cheetahs, is to connect fragmented habitats. This connectivity is crucial for several ecological reasons. It allows animals to move naturally between different protected areas (like Kuno National Park, Gandhi Sagar Sanctuary, and Mukundara Hills Tiger Reserve in this case). Such movement facilitates dispersal to new territories, access to diverse food and water resources, and, critically for long-term survival, interbreeding between different sub-populations. This genetic exchange is vital for maintaining a healthy and resilient metapopulation, which is a group of spatially separated populations of the same species that interact at some level.

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