

R.C. Reddy IAS Study Circle

UPSC CSE PRELIMS 2026

OPEN TEST-03

GENERAL STUDIES PAPER – I

Key & Explanation

Q1. D

Context: India has officially nominated Sarnath for the UNESCO World Heritage List (2025-26 cycle), potentially ending its 27-year wait on the tentative list.

Sarnath:

- Sarnath is a major Buddhist pilgrimage center near Varanasi, Uttar Pradesh, recognized as the site where Gautama Buddha delivered his first sermon and set in motion the Wheel of Dharma. It is significant for Buddhists, Jains, and historians alike, housing some of India's most iconic archaeological and spiritual monuments.

Geographic Location and Overview

- Sarnath is located about 8–10 kilometers northeast of Varanasi, near the confluence of the Ganges and Varuna rivers.
- The area is known for its tranquil deer park, referencing a local legend where a king declared the site a sanctuary for deer.

Religious and Historical Significance

- Sarnath is one of the four holiest Buddhist sites, alongside Lumbini, Bodh Gaya, and Kushinagar. Here, soon after his enlightenment around 528 BCE, Buddha taught the Four Noble Truths to his first five disciples, thus establishing the Buddhist Sangha or monastic community.
- The site is also revered in Jainism, as the birthplace of Shreyansanatha, the 11th Tirthankara. The Sarnath Jain Tirth temple near the ruins commemorates this connection.

Decline & Destruction:

- Sarnath was **sacked and burned around 12th century CE**.
- Some historians attribute destruction to **Qutb-ud-din Aibek's invasion** (1193 CE), others to a brahmanical takeover attempt followed by Islamic raids.
- Monks fled, and the site fell into ruin for nearly seven centuries.

Key Monuments and Archaeology

- **Dhamek Stupa:** Marks the spot where Buddha delivered his first sermon.
- **Ashoka Pillar:** Emperor Ashoka erected this pillar with a four-lion capital, which is presently the national emblem of India.
- **Ancient Monasteries and Ruins:** The area is replete with stupas, viharas, and shrines from various periods, flourishing especially under Mauryan, Gupta, and later dynasties.
- The Sarnath Museum houses the famous Lion Capital and other important relics discovered during excavations.

Notable Features

- Inscribed among nominated UNESCO World Heritage Sites.
- The Lion Capital of Ashoka from Sarnath is depicted on India's currency and emblem.

Sarnath stands as a living testimony to the origins and spread of Buddhism, the coexistence of diverse faiths, and India's enduring spiritual and artistic legacy.

Q2. D

Context: Seven new natural heritage sites from India have been added to UNESCO's Tentative List of World Heritage Sites, raising India's total to 69 properties under consideration.

Sites Nominated & Key Features

- **Deccan Traps, Maharashtra** – Among the world's best-preserved lava flows, located in Koyna Wildlife Sanctuary (also a UNESCO site).
- **St. Mary's Island Cluster, Karnataka** – Rare columnar basaltic rock formations from the Late Cretaceous period (85 mya).
- **Meghalayan Age Caves, Meghalaya** – Includes Mawmluh Cave, the global stratotype for Meghalayan Age in the Holocene Epoch.
- **Naga Hill Ophiolite, Nagaland** – Exposes oceanic crust uplifted on land, crucial for understanding plate tectonics.
- **Erra Matti Dibbalu, Andhra Pradesh** – Red sand dunes with paleo-climatic evidence, showcasing coastal geomorphology.
- **Natural Heritage of Tirumala Hills, Andhra Pradesh** – Home to the Eparchaeon Unconformity (1.5 billion years old) and Silathoranam arch.
- **Varkala Cliffs, Kerala** – Spectacular coastal cliffs exposing Warkalli Formation, with natural springs and scenic value.

	<i>Natural Sites</i>	<i>States/UTs</i>
1	St. Mary's Island Cluster	Karnataka
2	Erra Matti Dibbalu	Andhra Pradesh
3	Varkala Cliffs	Kerala
4	Mawmluh Cave	Meghalaya

Q3. D

Context: Members of the Raj Gond Tribe from Adilabad district of Telangana are going to perform Gussadi dance for the 78th Hyderabad Liberation Day.

	<i>Dance Forms</i>	<i>Tribes</i>	<i>States/UTs</i>
1	Bardo Chham	Sherdukpens	Arunachal Pradesh
2	Tertali	Kamar	Madhya Pradesh
3	Rikham Pada	Nishi	Arunachal Pradesh
4	Gussadi	Raj Gond	Telangana

Q4. D

Context: UNESCO recognition of Indian ritual theatres—Kutiyattam, Mudi yettu, Ramman, and Ramlila—highlights their Intangible Cultural Heritage status and the need for sustained safeguarding and transmission.

The ritual theatre and dance forms of **Kutiyattam, Mudi yettu, Ramman, and Ramlila** were recently in the news primarily because their inscription on the **UNESCO Representative List of Intangible Cultural Heritage of Humanity** had reached its **15th or a significant anniversary**.

- **Kutiyattam** (Sanskrit theatre of Kerala) was proclaimed a Masterpiece of the Oral and Intangible Heritage of Humanity in **2001** and inscribed on the Representative List in **2008**.
- **Ramlila** (Traditional performance of the Ramayana) was inscribed in **2008**.
- **Ramman** (Religious festival and ritual theatre of the Garhwal Himalayas) was inscribed in **2009**.
- **Mudi yettu** (Ritual theatre and dance drama of Kerala) was inscribed in **2010**.

These anniversaries provide a context for renewed focus and discussion on their cultural significance and preservation.

Q5. D

Context: India's only active volcano at Barren Island, Andaman Sea, witnessed two mild eruptions on 13 and 20 September 2025.

- **Statement 1 is correct:** Large volcanic eruptions release huge amounts of Sulphur dioxide (SO_2), which converts into **sulphate aerosols** in the stratosphere. These aerosols reflect incoming sunlight back to space, leading to a demonstrable cooling effect on the Earth's surface. Since Barren Island is located in the **Bay of Bengal**, the initial and most pronounced **regional cooling** would occur in its vicinity.
- **Statement 2 is correct:** Volcanic ash is a severe hazard to aircraft, causing engine failure and visibility problems; therefore, air traffic would be **disrupted**, especially the **east-bound** routes that cross the Andaman Sea and Bay of Bengal. Additionally, a high concentration of ash and aerosols can interfere with radio waves, including those used for **satellite communications** (like India's INSAT series), leading to signal degradation or blackout.
- **Statement 3 is correct:** Many volcanic ejecta are rich in **iron**. In nutrient-poor (but iron-limited) oceanic regions, the deposition of this volcanic ash acts as a natural **iron fertilization** agent. Iron is a crucial micronutrient for **phytoplankton** (microscopic marine plants), and its sudden enrichment can cause massive, temporary phytoplankton blooms in the Bay of Bengal.
- **Statement 4 is correct:** The timing and intensity of the **Southwest Monsoon** are critically dependent on the differential solar heating between the Indian landmass and the Indian Ocean. A large volcanic eruption injecting sulphate aerosols (as in statement 1) would reduce the solar radiation reaching the surface of the Indian Ocean (and the land). This **reduction in solar heating** can disrupt the normal pressure and temperature gradients that drive the monsoon system, potentially leading to a **delayed or weakened onset** of the monsoon.

Q6. C

Context: The Delhi High Court protected the personality rights of Aishwarya Rai Bachchan and Abhishek Bachchan against AI-generated misuse of their images and voices.

- **Statement a is correct:** The right to privacy is central to protecting an individual's persona. The Supreme Court's landmark judgment in **K. S. Puttaswamy v. Union of India (2017)** strongly affirmed privacy as a

fundamental right under **Article 21** (Right to Life and Personal Liberty), which forms the bedrock for protecting an individual's right to control their own identity and image.

- **Statement b is correct:** Personality rights encompass two main types of rights: the **Right to Publicity** (the commercial right to profit from one's fame) and the **Right to Privacy** (the right to be left alone). In India, courts have recognized that the **Right to Publicity** (commercial aspect) can pass to the heirs of a famous personality for a limited period after death, often to prevent misuse of their established brand value.
- **Statement c is not correct:** The **Copyright Act, 1957** deals with the rights of authors and creators over their original literary, dramatic, musical, and artistic works. While the Act does contain a provision for **Performer's Right** (Section 38), which grants certain exclusive rights to performers, it **does not** expressly provide comprehensive statutory protection for the general "identity and image of a person" as part of personality rights. The primary legal recourse for unauthorized use of a persona remains common law and the Constitution.
- **Statement d is correct:** **Passing off** is a common law tort that prevents one party from misrepresenting their goods or services as being those of another. When a celebrity's persona is used without permission to endorse a product, it falsely suggests that the celebrity is associated with or has endorsed that product, which courts have recognized as a form of passing off.

Q7. C

Context: *Ho tribals in Jharkhand's Kolhan region staged protests alleging interference in their traditional Manki-Munda selfgovernance system after some Mundas were removed.*

About Manki-Munda System:

- A traditional, decentralised self-governance model followed by the Ho tribe of Jharkhand's Kolhan region.
- It revolves around village heads (Mundas) and pidh heads (Mankis) who collectively resolve disputes and maintain order.

	<i>Self-governance system</i>	<i>Tribes</i>
1	Parha Raja System	Munda
2	Manjhi Parganait System	Santhal
3	Manki-Munda System	Ho
4	Putu Menden	Ao

Q8. B

Context: *The U.S. administration under Donald Trump announced a \$100,000 fee hike on fresh H-1B applications, sparking debate on whether the L-1 visa could be an alternative for Indian professionals.*

Various Visa types:

- **H-1B:** Issued to professionals in *specialty occupations* such as IT, engineering, finance, medicine, etc. Requires employer sponsorship.
- **F-1:** Granted to *academic students* enrolled in U.S. universities or colleges for full-time study.
- **J-1:** For *exchange visitors* under government, educational, or cultural programs — includes scholars, researchers, teachers, au pairs, and interns.
- **L-1:** For *intra-company transferees* — employees of multinational firms transferred from foreign branches to U.S. offices.

Q9. A

Context: External Affairs Minister S. Jaishankar addressed the India– SICA Foreign Ministers’ Meeting.

- **Statement 1 is correct:** The Central American Integration System (SICA) was established on **December 13, 1991**, with the signing of the **Tegucigalpa Protocol**, which amended the original Charter of the Organization of Central American States (ODECA).
- **Statement 2 is not correct:** The General Secretariat of SICA is located in **San Salvador, El Salvador**.
- **Statement 3 is not correct:** SICA is an organization of Central American nations. The founding members were the Central American states: **Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama**. The USA is not a member but holds the status of an **Extra-Regional Observer**.

Q10. D

Context: Madhya Pradesh Chief Minister launched a ‘Vedic clock’ and its mobile app, on 1st September 2025.

- **Statement 1 is correct:** The Vikram Samvat is an ancient calendar system widely used in India. It is a **luni-solar calendar** (tracking both the Moon's phases and the Sun's position) that is historically tied to the victory of King Vikramaditya and commences in **57 BCE**. The clock, being "Vedic," is designed around this traditional time system.
- **Statement 2 is correct:** This is the core feature of the Vedic time calculation system.
 - 1 day is divided into **60 Ghati** (Ghatika).
 - 1 Ghati is divided into **60 Pal** (Vipalas in some systems).
 - 1 Pal is divided into **60 Vipala** (or Praana).
 - This is distinct from the 24-hour, 60-minute, 60-second system of the modern Gregorian clock.
- **Statement 3 is correct:** The clock uses **Ujjain** as the prime meridian (), as it was indeed the reference point in ancient Indian astronomy (*Jyotish Shastra*).

Q11. B

Context: Personalised medicine customises cancer treatment based on genes, but tests can be unclear. Functional genomics helps understand genes better and guide treatment. It is slowly spreading in Africa despite high costs and limited resources.

Functional Genomics:

- The study involves **RNA sequencing (transcriptomics)**, **proteomics**, and **gene editing (CRISPR)** — all tools used to understand **gene function and expression** in a system-wide context.
- **Functional Genomics** seeks to determine **how genes contribute to cellular and organismal functions**, especially when mutations or environmental factors cause variation in expression.

Structural Genomics (a) and **Comparative Genomics (c)** deal with structure and sequence comparison, not active functional mechanisms.

Pharmacogenomics (d) is focused specifically on **drug–gene interactions**, which is not the aim in this case.

Q12. B

Context: China's EV sector is facing severe "involution" — a cycle of destructive price wars and oversupply leading to financial stress for manufacturers.

Involution:

- **Involution**, a concept introduced by **Clifford Geertz**, describes a process in which **more effort and labour** are invested into a traditional system **without improving output or efficiency**.
- In **agricultural involution**, especially seen in Java and later used in Indian contexts, **labour intensifies but yields remain static**, leading to **shared poverty rather than growth**.

Q13. A

Context: Nilgiris tea growers are facing a persistent cost price crisis due to low prices for green tea leaves (GTL), overproduction, and weak auction mechanisms, threatening the sustainability of small growers in the region.

- **Statement I is correct:** Nilgiri tea, grown in the mountains of Tamil Nadu, is famous for its **aromatic and brisk flavor** profile, which is lighter than Assam or Darjeeling tea. It has minimal astringency and bright liquor, making it highly valued in the international market, particularly for use in **blends and iced teas** because it does not cloud when chilled.
- **Statement II is correct:** The Nilgiris benefit from the unique geography that allows them to receive rain from both the **Southwest Monsoon** (June-September) and the **Northeast Monsoon** (October-December). This consistent moisture, combined with the **high altitude** and **cooler temperatures**, allows for **year-round tea cultivation**, unlike regions that have distinct dormant periods.
- **Statement II explains statement I:** The continuous, year-round growing cycle (statement II) in the cool, moist high-altitude climate is the primary factor that leads to the **consistent, mild, and highly aromatic/brisk flavor** (statement I) of Nilgiri tea. The absence of long, harsh winters or dry periods prevents the tea bush from entering a stress-induced dormant phase, which, in turn, influences the unique chemical composition and flavor characteristics. Therefore, **statement II is the correct explanation of statement I**.

Q14. B

Context: Researchers at the Central University of Rajasthan (CUoR) successfully grew wheat on desert land in Ajmer using 'soilification' technology.

About Soilification Technology:

- A biotechnology-based method that transforms loose desert sand into soil-like medium suitable for farming.
- Uses indigenous bioformulations and polymers to improve fertility and water retention.

	<i>Technologies</i>	<i>Applications</i>
1	Soilification Technology	Enhances soil fertility, water retention, and carbon sequestration using carbon-rich biomass
2	Biochar Amendment	Converts saline-alkali or desertified land into fertile soil suitable for agriculture
3	Drip Irrigation with Fertigation	Precise delivery of water and nutrients directly to plant roots, minimizing wastage
4	Mycorrhizal Inoculation	Promotes symbiotic fungal associations to improve nutrient uptake and plant resilience

Q15. B

Context: Taliban foreign minister cancelled a planned India visit after failing to secure a UN Security Council travel-ban waiver.

- It is a subsidiary body of the UN Security Council focused on Taliban-linked individuals and entities.
- Established in: It was established in 2011 by Resolution 1988 after the split from the 1267 regime.
- It comprises all 15 Security Council members and decides by consensus.
- Current Chair (till 31 December 2025): H.E. Mr. Asim Aftikhar Ahmad (Pakistan); Vice-Chairs for 2025: Guyana and the Russian Federation.
- Supported by the Analytical Support and Sanctions Monitoring Team.
- Prepares annual reports, has Guidelines, and announces meetings in the UN Journal.
- **Objectives**
 - Ensure compliance with travel bans, arms embargoes, and asset freezes against Taliban affiliated actors who threaten peace in Afghanistan.
 - Oversee implementation of sanctions and designate individuals and entities meeting listing criteria.
 - Consider and decide on exemption requests, delisting, and periodic reviews of listings.
 - Examine Monitoring Team reports and report to the Security Council; conduct outreach.
- **Key feature**
 - List-based regime covering about 130 individuals and entities.
 - Chair exercises procedural control, including agenda-setting, consultations, and recommendations.
 - Consensus decision-making limits unilateral action.
 - No investigative or enforcement powers; relies on state cooperation for implementation.

Note: While the TSC's decisions are binding on all UN member states, there is a mechanism for challenging or appealing its decisions through the Ombudsperson, who reviews delisting requests.

Q16. B

Context: Rising awareness highlights Pink Tax in India, where women often pay more for similar products and services like razors, shampoos, and haircuts, silently eroding household savings and demanding fair pricing.

About Pink Tax

- Pink Tax is not a government levy but a gender-based pricing phenomenon where women's products or services cost more than men's equivalents despite similar quality.
- Common examples include personal care items, toys, clothing, dry-cleaning, and salon services.
- The term originated in California in 1994; global studies reveal women pay 7–13% more.
- In India, awareness is low, with 67% never having heard of Pink Tax (IFSA research). The 2018 GST exemption on sanitary napkins was a landmark move against such disparity.
- **India's Case:** Women's shampoos, razors, and haircuts are often priced higher; 2018 GST relief on sanitary products marked progress.
- **Economic Impact:** With women earning less on average, Pink Tax deepens inequality and strains family savings.
- **Legal & Awareness:** No specific anti-Pink Tax law exists, but NCDRC mandates fair pricing.

Q17. A

Context: India signed an exploration contract with the Jamaica-based ISA in Delhi on September 15, 2025, the first licence to explore polymetallic sulphur nodules in the Carlsberg Ridge.

About Carlsberg Ridge:

- It is a mid-oceanic ridge (a divergent plate boundary) in the Indian Ocean, specifically in the Arabian Sea and the northwest Indian Ocean.
- The ridge extends from the triple junction of the African, Indian, and Australian plates, northwest to the Gulf of Aden.
- It separates the Arabian Sea to the northeast from the Somali Basin to the southwest, turns west around Socotra, and links to the East African Rift via the Gulf of Aden.
- It forms the boundary between the Indian and Arabian tectonic plates, extending from near Rodrigues Island to the Owen fracture zone.
- Its mean depth is about 1,800–3,600 metres below sea level, and it rises roughly 2,100 metres above the seafloor.
- It spans about 3,00,000 sq km and coincides with a belt of seismic activity, with numerous earthquake epicentres.



Q18. A

Context: Recently, the Securities and Exchange Board of India and the Reserve Bank of India (RBI) have been in advanced talks to encourage trading in corporate bond index derivatives to deepen the debt market.

- **Statement I is correct:** Corporate Bond Index Derivatives (like futures or options on a bond index) are indeed used to trade the **overall performance of a basket** of bonds. This ability to transact across a portfolio instantly is what **aids risk management** (by providing a quick hedge) and **market liquidity** (by making it easier for large investors to enter/exit positions).
- **Statement II is correct:** This statement provides the foundational definition: these derivatives are contracts whose value is derived from a corporate bond index. It also lists the primary uses: hedging, speculation, and promoting deeper corporate debt markets.
- **Statement II explains statement I:** Statement I describes the *consequences* and *benefits* (aiding risk management and market liquidity). Statement II describes the *mechanism* and *utility* (derived value, enabling hedging) that directly **causes** those consequences. The fact that the value is derived from the index (the mechanism) and is used for hedging (the utility) is precisely *why* it helps manage risk and improve liquidity in the underlying market.

Q19. C

Context: Scientists have proposed the Laser Interferometer Lunar Antenna (LILA) as a next-generation project to detect gravitational waves directly from the Moon's surface.

- **Statement 1 is correct:** LILA aims to fill the gravitational-wave detection gap in the mid-frequency band (~0.1-10 Hz) by placing detectors on the lunar surface to avoid Earth's seismic and atmospheric noise, which interfere with Earth-based detectors.
- **Statement 2 is correct:** The high sensitivity of the interferometers could potentially allow for the detection of gravitational field perturbations from the **Moon's own oscillations (normal modes)**, offering a unique method for lunar seismology and internal structure studies.
- **statement 3 is correct:** While placing detectors in orbit is a strong concept, the most widely discussed and detailed LILA design involves a **long-baseline triangular interferometer array deployed on the lunar surface**, utilizing the stable environment and geometry of the Moon. The proposed arms are indeed tens of kilometers long (e.g. ~40 km).
- **statement 4 is not correct:** LILA is not intended to replace LIGO or space-based missions like LISA; rather, it complements them by covering the mid-frequency “decihertz gap” which neither terrestrial nor space-based detectors currently cover. Terrestrial and satellite observatories remain relevant for their frequency ranges.

Q20. A

Context: NASA's Perseverance rover has detected the strongest potential biosignatures yet on Mars, in a rock sample nicknamed Cheyava Falls from the Sapphire Canyon region.

- **Statement 1 is correct:** *Sapphire Canyon* is the **nickname of the core sample** drilled from the *Cheyava Falls* outcrop, part of Jezero Crater's Bright Angel Formation (NASA, 2025).
- **Statement 2 is correct:** Spectral analysis found **vivianite ($\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$)** and **greigite (Fe_3S_4)**, both of which can form from microbial or abiotic processes in redox-sensitive environments.
- **Statement 3 is not correct:** NASA explicitly called them **potential biosignatures**, *not* confirmed evidence of life — as abiotic geochemical processes could also explain their formation.

Q21. D

Context: Recently Former RBI Governor Urjit Patel appointed IMF Executive Director for 3 years.

- **Statement I is incorrect:** The Executive Directors (EDs) at the International Monetary Fund (IMF) are **elected** by the Governors representing the respective constituency countries. While India does nominate its candidate, the formal process is an election by the Governors of the constituency countries (which includes India). The Government of India's role is to nominate the individual for the post, and their appointment is approved by the Appointments Committee of the Cabinet, but the ED represents the entire constituency and is formally elected to the IMF's Executive Board by those countries.
- **Statement II is correct:** The IMF's Executive Board operates on a constituency system. Most Executive Directors, including the one representing India, are elected by a group of countries (a constituency). India is part of a four-country constituency along with **Bangladesh, Bhutan, and Sri Lanka**. This group of countries is represented by a single Executive Director.

Q22. D

Context: India's 10-year government bond yield rose by 26 bps in the past month, even as the RBI reduced the repo rate by 100 bps to 5.5%.

- **Option a is not correct:** A fall in the fiscal deficit means the government will borrow less, leading to a **reduced supply of new bonds**. Reduced supply would *increase* the price of existing bonds and thus **reduce the yield**, which is the opposite of the situation described.
- **Option b is not correct:** A bond buyback is when the government repurchases its own outstanding bonds. This would **increase demand** for existing bonds, causing their **prices to rise** and their **yields to fall**, which is the opposite of the situation described.
- **Option c is not correct:** When inflation expectations fall, the **real return** (nominal yield minus inflation) on bonds increases. Investors would demand a *lower* nominal yield to achieve the same real return. A sharp fall in inflation expectations would typically cause bond yields to **fall**, not rise. (A rise in inflation expectations, not a fall, would be a good alternative explanation for rising yields, but is not one of the choices.)
- **Option d is correct:** If bond yields in major global markets (like the US) increase, international investors find those markets more attractive. They will **sell Indian bonds** to invest elsewhere, leading to a **capital outflow** from India. This selling pressure **reduces demand** for Indian bonds, causing their **prices to fall** and their **yields to rise**. The RBI's policy repo rate mainly influences short-term interest rates. Long-term G-Sec yields, like the 10-year bond, are often more influenced by broader market factors, especially **global interest rate trends and capital flows**, which can decouple from the RBI's short-term rate.

Q23. C

Context: Outward remittances under RBI's Liberalised Remittance Scheme (LRS) fell 11% YoY in July 2025 to \$2,452.93 million, mainly due to lower spending on travel and studies abroad.

- **Statement I is correct:** The **Liberalised Remittance Scheme (LRS)** allows all resident individuals (including minors) to remit up to **USD 250,000** per financial year (April to March). This ceiling applies to the aggregate of all permissible current account transactions (e.g., travel, education, gifts) and capital account transactions (e.g., purchasing shares, debt, or property) without needing specific prior approval from the Reserve Bank of India (RBI).
- **Statement II is incorrect:** The LRS was introduced in 2004 to **liberalise and ease capital outflows** for resident individuals, marking a significant step toward a more open capital account. However, the second part of the statement, claiming it was intended to "**reduce India's current account deficit through higher remittance inflows**," is factually wrong.

Q24. C

Context: With the increase in cyberattacks and password theft, two-factor authentication apps such as Google Authenticator have become an essential tool for improving online security.

How TOTP Works and Enhances Security

TOTP is an algorithm that provides a strong, time-sensitive second factor for authentication.

1. **Short-Lived and Time-Synchronized Codes:** The core security feature is that the generated codes (typically 6 to 8 digits) are valid for a very short duration, usually **30 or 60 seconds**. This is achieved by incorporating the **current time** into the code generation process.
2. **Shared Secret:** Both the user's device (the authenticator app) and the authentication server possess the same **secret key** (often provided as a QR code or alphanumeric string during initial setup).
3. **Enhanced Security (Defense against replay attacks):** Since the code changes every 30-60 seconds, an attacker who intercepts the code cannot use it minutes later because the server's time-based calculation will

produce a different expected code. This effectively neutralizes **replay attacks**, which are common against fixed (static) passwords.

Q25. A

Context: *Albania has become the first nation to appoint an AI-generated “minister” tasked with tackling corruption.*

About

- Albania’s Prime Minister Edi Rama announced the digital minister to his cabinet.
- The digital assistant is named ‘Diella’ meaning ‘Sun’ and has been given responsibility of taking all decisions related to the public tenders, making them 100% corruption-free.
 - The AI minister will also have the right to assess tenders and hire talents from across the world.

Q26 B

- **Kanha National Park**, located in Madhya Pradesh, is famous for its successful conservation efforts to protect the **Barasingha** (*Rucervus duvaucelii*), also known as the Swamp Deer. It is the flagship species of the park.
- **Dachigam National Park**, located in Jammu & Kashmir, is known for its critically endangered **Hangul Deer** (*Cervus hanglu*), also called the Kashmir Stag, and not the Bengal Tiger. The park is not a tiger habitat.
- **Keoladeo National Park**, a UNESCO World Heritage Site in Rajasthan, is famous as a wintering site for migratory birds, including the critically endangered **Siberian Crane** (*Grus leucogeranus*), although its sightings have become rare in recent years.

Q27 D

- **Predation** is an interaction where one species (the predator) hunts and kills another species (the prey) for food. The relationship between **lions and deer** represents a classic example of this interaction.
- **Mutualism** is a relationship where both species benefit. In **lichens**, the **fungus provides structural support and absorbs nutrients, while the algae (or cyanobacteria) conduct photosynthesis** and supply food to the fungus.
- In **commensalism**, one species benefits while the other is neither helped nor harmed. **Cattle egrets follow grazing cattle**, feeding on insects stirred up by their movement, benefiting without affecting the cattle.
- **Parasitism** is an interaction where one species (the parasite) benefits at the expense of another (the host). **Cuscuta** (dodder plant) is a parasitic plant that wraps around host plants like mango trees, extracting nutrients and harming the host.

Q28 C

- **Chlorofluorocarbons (CFCs)** are **potent ozone-depleting substances** due to their chlorine content, which breaks down ozone molecules in the stratosphere. **Hydrofluorocarbons (HFCs)**, on the other hand, **do not deplete the ozone layer** as they do not contain chlorine.
- While CFCs are potent greenhouse gases, HFCs generally have a higher Global warming potential because they are designed to replace CFCs with reduced ozone-depleting effects but still trap significant heat in the atmosphere.
- HFCs were introduced as alternatives to CFCs in refrigeration, air conditioning, and aerosol propellants because they do not deplete the ozone layer, aligning with global environmental goals.
- The **Montreal Protocol** is an international treaty adopted to phase out ozone-depleting substances (ODS), including CFCs, Halons, and other chemicals that harm the ozone layer.

- **The Kigali Amendment was adopted to address the climate impacts of HFCs**, which were widely used as replacements for ODS but have a high Global Warming Potential (GWP).

Q29 D

- **Bioindicators** are living organisms or biological responses that provide information about the health of an environment, helping to assess its quality and detect changes. These organisms respond to environmental conditions like pollution, climate changes, or habitat disturbances in ways that are measurable and observable.
- **Lichens** are highly sensitive to air pollution, especially **sulfur dioxide**. Their presence or absence in an area can indicate air quality. In areas with high sulfur dioxide levels, lichens often decline or are absent, making them excellent bioindicators of air purity. (pair 1 is correct)
- **Phytoplankton blooms**, particularly algal blooms, occur when nutrient levels (like nitrogen and phosphorus) are excessively high in water bodies. These blooms are indicators of eutrophication, often resulting from agricultural runoff or sewage discharge. (pair 3 is correct)
- **Mosses** absorb pollutants directly from the air and are used to monitor heavy metal contamination in the environment. (pair 4 is correct)
- **Plant leaves:** Visible damage such as stippling, bronzing, or yellowing on plant leaves can indicate elevated ozone levels, a significant air pollutant. (pair 2 is correct)

Q30 D

- **The Solid Waste Management Rules, 2016** were introduced by the Ministry of Environment, Forest and Climate Change (MoEFCC) in India to address the growing problem of solid waste generation and mismanagement across the country. The rules were a step forward in managing waste sustainably and improving waste processing in urban and rural areas.
- **Every waste generator shall segregate and store the waste generated by them in three separate streams namely bio-degradable, non bio-degradable and domestic hazardous wastes** in suitable bins and handover segregated wastes to authorised waste pickers or waste collectors as per the direction or notification by the local authorities from time to time.
- No waste generator shall throw, burn or bury the solid waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies. (statement 1 is correct)
- **All waste generators shall pay such user fee for solid waste management, as specified in the bye-laws of the local bodies.** (statement 2 is correct)
- **The Ministry of Environment, Forest and Climate Change shall be responsible for over all monitoring the implementation of these rules in the country.** It shall constitute a **Central Monitoring Committee** under the Chairmanship of Secretary, Ministry of Environment, Forest and Climate Change comprising officer not below the rank of Joint Secretary. (statement 3 is correct)

Q31 C

- **Metagenomics is the study of genetic material obtained directly from environmental samples, allowing for the analysis of entire microbial communities without the need to culture individual organisms.** This approach has revolutionized our understanding of microbial diversity and function in various environments. **By studying the collective genomes of microorganisms**, including those that are unculturable, metagenomics provides insights into the roles these communities play in ecosystems, human health, and industrial processes.
- Metagenomics can be categorized into several types based on methodology and application.
 - **Shotgun metagenomics** involves sequencing all DNA in a sample to analyze microbial diversity, identify novel genes, and explore metabolic pathways.

- **16S rRNA metagenomics** targets specific marker genes, such as the 16S rRNA gene, to classify and study microbial diversity, particularly in bacteria and archaea.
- **Functional metagenomics** focuses on discovering the functions of genes by expressing environmental DNA in host organisms, often to identify novel enzymes or biochemical activities.
- **Comparative metagenomics** examines microbial communities across different samples or conditions to understand variations in composition and function.
- A more specific branch, **aerial metagenomics**, investigates microbial communities in the atmosphere, which is critical for tracking airborne pathogens, allergens, or environmental impacts.

Q32 B

- **Graphene is a single layer of carbon atoms tightly packed in a two-dimensional honeycomb lattice structure.** It is widely celebrated for its extraordinary properties, which include **high electrical and thermal conductivity, exceptional mechanical strength, and flexibility.**
- **Graphene is the thinnest known material, being only one atom thick,** yet it is also one of the strongest, surpassing steel in strength.
- Its unique electronic structure allows electrons to behave as massless Dirac fermions, enabling them to move through the material with **minimal resistance**, which results in remarkable electrical conductivity.
- **Furthermore, graphene is nearly transparent, absorbs only 2.3% of visible light,** and is chemically inert, making it suitable for applications in flexible electronics, energy storage, sensors, and nanocomposites.
- Due to these unparalleled characteristics, graphene is considered a revolutionary material with vast potential in scientific research and industrial applications.
- Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I

Q33 C

- **SpaceX has become the first organization to successfully catch the descending booster of a rocket mid-air,** marking a groundbreaking achievement in space exploration technology.
- This feat was accomplished using a system called "**Mechazilla**," which consists of giant mechanical arms attached to the launch tower. During the test, the Super Heavy booster, a key component of SpaceX's Starship system, descended and was precisely caught by these arms.
- This innovation is a critical step toward achieving fully reusable rocket systems, which aim to significantly reduce launch costs and turnaround times. By eliminating the need for ocean landings or complex recovery operations, this technology enhances the efficiency and sustainability of space missions, reinforcing SpaceX's leadership in aerospace innovation.

Q34 A

- **Carbon steel and stainless steel** are two widely used materials in construction, manufacturing, and various industries due to their unique properties.
- **Carbon steel primarily consists of iron and carbon, offering high strength and hardness,** which makes it ideal for structural applications and tools. Carbon steel is often stronger in terms of tensile strength and hardness compared to stainless steel in certain applications, making it ideal for structural and heavy-duty uses. (statement 1 is correct)
- However, it lacks significant corrosion resistance. On the other hand, **stainless steel contains chromium,** typically at least 10.5%, which forms a protective oxide layer, **making it highly resistant to rust and corrosion.** Additionally, stainless steel can be **more flexible,** depending on the specific grade. (statement 2 is correct)
- While chromium is a key difference, **stainless steel also includes other alloying elements like nickel and molybdenum,** which contribute to its unique properties, meaning their **compositions are not entirely identical.** (statement 3 is incorrect)

Q35. B

- **A gas lighter operates using the piezoelectric effect**, a phenomenon where certain materials generate an electric charge when subjected to mechanical stress. Inside the gas lighter, pressing the button activates a spring-loaded mechanism that forces a small hammer to strike a **piezoelectric crystal, such as quartz. This impact deforms the crystal, causing it to produce a high-voltage electric charge.** The charge travels through a circuit and is discharged as a spark at the tip of the lighter. When this spark comes into contact with the gas released from the stove burner, it ignites the gas, producing a flame. This mechanism is simple, efficient, and does not require external power sources like batteries, making it a durable and cost-effective tool for everyday use.

Q36 . D

- **Optical fibers** are thin, flexible strands of glass or plastic that transmit light over long distances. They work on the **principle of total internal reflection**, which ensures light signals are confined within the fiber core.
- **Applications:**
- **High-Speed Data Transmission:**
 - Optical fibers are the backbone of modern communication systems, offering unparalleled speed and bandwidth for transmitting data. They are widely used in internet services, telephone networks, and cable TV due to their ability to carry large amounts of information with minimal signal loss over long distances.
- **Medical Surgeries:**
 - In the medical field, optical fibers are essential for minimally invasive procedures. They are used in endoscopy to provide high-resolution imaging of internal organs and tissues. Additionally, they are employed in laser surgeries to transmit focused light beams for precise cutting and treatment.
- **Monitoring Power Grids:**
 - Optical fibers are used in sensing technologies for monitoring power grids. They help measure critical parameters such as temperature, strain, and voltage. These sensors ensure efficient grid operation and enable early detection of faults, enhancing reliability and safety.
- **Decorative Lighting:**
 - Optical fibers are a popular choice for creating decorative lighting effects due to their flexibility and ability to transmit light in various colors. They are used in architectural designs, ambient lighting in homes and cars, and displays in theaters and theme parks.
- **Data Centers and Networking:**
 - Optical fibers are crucial in modern data centers and networking setups. They provide high-speed connectivity for cloud computing and large-scale data processing. Their low latency and high bandwidth capabilities make them ideal for supporting the ever-growing demand for data transfer.

Q37 B

- **Quasar:** An extremely bright and distant object powered by a supermassive black hole in the center of a galaxy.



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- **Supernova:** The explosive death of a star, releasing immense energy and creating elements like gold and iron.



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- **Exoplanet:** A planet orbiting a star beyond our solar system, many of which are being studied for potential habitability.
- **Pulsar:** A type of neutron star that spins rapidly, emitting radiation in regular pulses like a lighthouse.



Q38. D

- **Artificial Neural Networks (ANNs) are computational models inspired by the structure and functioning of biological neural networks in the human brain.** They consist of layers of interconnected artificial neurons (nodes) that process data through a system of weights, biases, and activation functions.
- ANNs are designed to **identify patterns, learn from data, and make predictions or decisions** without being explicitly programmed for specific tasks. They are a core component of deep learning and are widely used in applications such as **image recognition, natural language processing, autonomous systems, and predictive analytics**. The ability of ANNs to handle large-scale, complex datasets has made them a cornerstone of modern artificial intelligence and machine learning.
- However, simulating quantum mechanical wave functions often requires specialized models and techniques in quantum computing or physics, rather than general-purpose ANNs, and **typically involves extensive training on data to achieve accurate results**

Q39 B

- India deploys a spectrum of conventional and nuclear-powered submarines equipped with suitable sensor suites, armaments and engines fulfilling niche maritime operations.

- India has three classes of submarines - the Shishumar class, the Sindhughosh class, and the indigenously developed Kalvari class.
- **Shishumar class:** These 4 submarines were commissioned under technology transfer from Germany
- **Sindhughosh class** - It includes 7 active Russian-origin Kilo-class submarines
- **Kalvari class** - These are the **indigenously built six diesel-electric submarines** of Contemporary Barracuda designs under technology transfer from France's Scorpene class submarines, built at Mazagon Dock. (statement 1 is correct)
 - Names of the Kalvari class submarines (commissioned only) are INS Kalvari, INS Khanderi, INS Karanj, INS Vela, INS Vagir. INS Vagsheer
- **India presently does not have any nuclear-powered attack submarines (SSNs) in service.** The Akula class submarine INS Chakra II, leased from Russia, has been decommissioned in 2021. (statement 2 is correct)
- **India presently has SSBN** - INS Arihant, INS Arighaat - an Arihant Class SSBN which has been developed indigenously under the Advanced Technology Vessel program. (statement 3 is incorrect)

Q40 B

- Recently, the BharatGen initiative was launched by the **union Ministry of Science & Technology**. (statement 2 is correct)
- **It is an initiative which will create generative AI systems that can generate high-quality text and multimodal content in various Indian languages.** (statement 1 is incorrect)
- It is the first Government supported Multimodal Large Language Model Initiative
- It is implemented by IIT Bombay under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).
- **Features of BharatGen**
 - The multilingual and multimodal nature of foundation models;
 - Bhartiya data set based building, and training;
 - Open-source platform development of an ecosystem of generative AI research in the country.
- **The Genome India Project**, a project funded and coordinated by the Department of Biotechnology (DBT), had finished sequencing 10,000 Indian genomes. The project involves whole-genome sequencing and data analysis of 10,000 individuals to understand disease nature in the Indian population and develop predictive diagnostic markers.

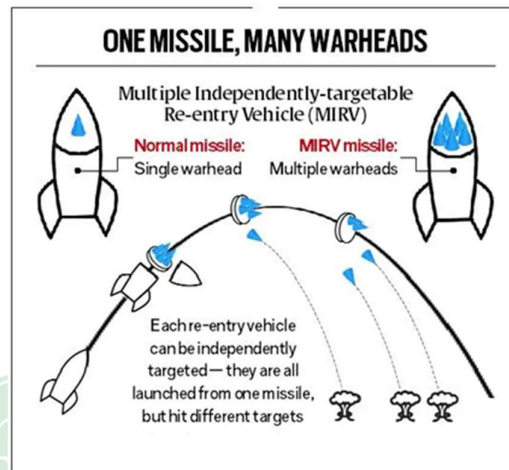
Q41 D

- **Recently, the World Health Organisation (WHO) has declared that the Government of India has eliminated Trachoma as a public health problem** becoming the third country in the South-East Asia Region to achieve this milestone.
- **Trachoma is a devastating eye disease caused by infection with the bacterium Chlamydia trachomatis.** (d is incorrect)
- The primary source of trachoma infection is the eye secretions of infected individuals, it can be transmitted through several routes, including:
 - Close physical contact, such as playing together or sharing a bed, especially among mothers and affected children.
 - Sharing towels, handkerchiefs, pillows, and other personal items.
 - Houseflies, which can carry the infection.
 - Coughing and sneezing.
- **Environmental risk factors that promote the transmission of trachoma** include:
 - Poor hygiene practices.
 - Overcrowded living conditions.
 - Water scarcity.

- Inadequate latrines and sanitation facilities.

Q42 A

- India entered into a small club of countries capable of delivering multiple nuclear warheads on a single missile. This was accomplished with the maiden flight test of **Agni-V**, India's longest range ballistic missile with a range of over **5,000 kilometres**, with multiple **independently targetable re-entry vehicle (MIRV) technology** under '**Mission Divyastra**' by the Defence Research and Development Organisation (DRDO).
- MIRV technology has fundamentally ballistic missile capabilities **by allowing a missile to carry multiple warheads, each striking different targets with precision.**
- **One of the primary advantages of MIRV is its ability to overwhelm enemy missile systems by presenting multiple targets, harder to intercept all warheads.**
- Thus, Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for



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Statement-I

Q43 A

- **Aiming for Viksit Bharat by 2047 and with a sharp focus and providing momentum to Nari Shakti, Union Minister for Finance & Corporate Affairs, Smt. Nirmala Sitharaman today proposed HPV vaccination to prevent Cervical Cancer and amalgamation of various schemes for maternal and child care, as she presented the Interim Budget 2024-25 in Parliament today.**
- The HPV vaccination programme will be for girls in the age group of 9 to 14 years for prevention of cervical cancer. The Government will encourage this vaccination among the eligible categories, she added.
- **The HPV vaccine is designed to protect against the human papillomavirus (HPV), which is a major cause of cervical cancer.**

Q44 C

- In a historic milestone marking entry into the vital **second stage of India's three stage nuclear program**, Prime Minister, Shri Narendra Modi witnessed today, **commencement of "Core Loading" at India's first indigenous Fast Breeder Reactor (500 MWe) at Kalpakkam, Tamil Nadu.**
- India has developed comprehensive capabilities spanning the entire spectrum of the nuclear fuel cycle. Government had approved in 2003, the creation of **Bhartiya Nabhikiya Vidyut Nigam Ltd (BHAVINI)** to construct and operate India's most advanced nuclear reactor-Prototype Fast Breeder Reactor (PFBR).
- In line with the true spirit of Aatmanirbhar Bharat, PFBR has been fully designed and constructed indigenously by BHAVINI with significant contribution from more than 200 Indian industries including MSMEs. Once commissioned, India will only be the second country after Russia to have commercial operating Fast Breeder Reactor.
- **The Fast Breeder Reactor (FBR) will initially use the Uranium (235)-Plutonium (239) Mixed Oxide (MOX) fuel. The Uranium-238 "blanket" surrounding the fuel core will undergo nuclear transmutation to produce more fuel, thus earning the name 'Breeder'. The use of Thorium-232, which in itself is not a fissile material, as a blanket is also envisaged in this stage. By transmutation, Thorium will create fissile Uranium-233 which will be used as fuel in the third stage. FBR is thus a stepping stone**

for the third stage of the program paving the way for the eventual full utilization of India's abundant thorium reserves. (b is correct)

Q45 D

- **Context:** A new way discovered by a team of researchers at the Department of Chemical Sciences in Bose Institute to create hydrogels using tiny protein fragments of just five amino acids from the SARS-CoV-1 virus, could help improve targeted drug delivery & reduce side effects.
- **Hydrogels are three-dimensional, cross-linked polymer networks known for their exceptional ability to absorb and retain water.** Their unique properties, such as flexibility, biocompatibility, and responsiveness to environmental stimuli, make them highly versatile for applications across diverse fields. From healthcare and agriculture to environmental remediation and personal care, hydrogels have become indispensable materials in modern science and industry.
- **Applications:**
 - **Drug Delivery Systems:** Hydrogels are used to deliver drugs in a controlled and targeted manner, especially in localized treatments like cancer therapy.
 - **Contact Lenses:** Soft hydrogels maintain moisture and provide comfort, making them an ideal material for contact lenses.
 - **Controlled Release of Fertilizers:** In agriculture, hydrogels are used to encapsulate fertilizers, enabling gradual nutrient release, reducing waste, and improving efficiency.
 - **Removing Microplastics from Water:** Emerging research has explored hydrogels' ability to capture microplastics, leveraging their absorbent and filtering properties for water purification.
 - **Diapers and Sanitary Products:** Hydrogels are widely used in personal hygiene products due to their superior capacity to absorb and lock fluids.

Q46 A

- **Context:** Reserve Bank of India (RBI) Governor Shaktikanta Das recently said the **Unified Lending Interface (ULI)**, to enable frictionless credit, will soon be introduced.
- ULI will play a similar role in transforming the lending space in the country, just as United Payment Interface (UPI) revolutionized the payment ecosystem. Continuing on the journey of digitalisation of banking services, last year **RBI launched the pilot of a technology platform which enables frictionless credit.** From now on, RBI proposes to call it the Unified Lending Interface (ULI). (statement 2 is not correct)
- For digital credit delivery, the data required for credit appraisal are available with different entities like Central and State governments, account aggregators, banks, credit information companies and digital identity authorities. However, they are in separate systems, creating hindrance in frictionless and timely delivery of rule-based lending.
- **ULI facilitates seamless and consent-based flow of digital information, including even land records of various states,** from multiple data service providers to lenders thereby cutting down the time taken for credit appraisal, especially for smaller and rural borrowers. (statement 1 is correct)
- **The ULI will empower banks, NBFCs, Fintech enterprises, and Startups to devise and deliver innovative solutions in payment, credit, and other financial domains.** This aligns with the government's vision to establish a digital public infrastructure. (statement 3 is not correct)

Q47 B

- **Context:** On September 26, 2024, the Bombay High Court's Division Bench delivered its final verdict striking down the IT (Amendment) Rules, 2023, as **unconstitutional**. The amendment allowed the Central Government to establish a Fact-Check Unit to label online content about government matters as fake or false.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023 were notified by the Ministry of Electronics and Information Technology on 6 April 2023.

- Apart from provisions related to online gaming, **the rules also grant authority to a fact check unit of the Central Government to label internet content concerning any business of the Central Government as fake, false or misleading and mandate its removal from the internet.** This implies that the union government now possesses the authority to remove any information it considers false, and there is more to it. (statement 1 is incorrect)
- **The amendment includes a provision revoking the legal protection granted to social media platforms and intermediaries under Section 79 of the Information Technology (IT) Act, 2000, if they fail to comply with the union governments orders.** (statement 2 is correct)
- According to Section 79 of the IT Act, 2000, intermediaries are exempt from hosting third-party data, information, or communication, as long as they practise due diligence while performing their duties under the act as defined by the IT rules. However, if an intermediary fails to do so, they will not receive immunity from liability under Section 79.

Q48 B

- **Recently, India and the US have signed two key pacts- a non-binding Security of Supply Arrangement (SOSA) and a Memorandum of Agreement regarding Assignment of Liaison Officers.**
- **Security of Supplies Arrangement (SOSA):** It allows both nations to prioritise each other's goods and services for national defense, ensuring supply chain resilience during emergencies.
 - Under SOSA, US defense contractors can request expedited deliveries from India and vice versa.
 - Although not legally binding, SOSA operates on mutual goodwill, with Indian companies prioritising US orders and the US offering assurances through its Defense Priorities and Allocations System (DPAS), managed by the Department of Defence (DoD) and the Department of Commerce (DOC).

Q49. D

- The United Nations (UN) Secretary-General, Antonio Guterres, recently addressed **the UN Summit of the Future 2024**, and called for urgent reforms to outdated UN institutions related to global peace, security, and finance. The Prime Minister of India also participated in the summit.
- **The UN Summit of the Future** is aimed at reforming and strengthening international governance. The summit seeks to address contemporary global challenges and secure a sustainable future for upcoming generations.
- This summit builds on recent UN efforts such as the 2022 UN Environment Stockholm+50 conference and the High Seas Treaty.
- **The theme of the Summit is 'Multilateral Solutions for a Better Tomorrow'.**
- The Summit concluded with the adoption of an outcome document –
 - **A Pact for the Future,**
 - **Global Digital Compact** and
 - **A Declaration on Future Generations**

Q50. A

- **The Central Bureau of Investigation (CBI) as part of ongoing Operation CHAKRA-III** has taken action to successfully dismantle a sophisticated virtual asset and bullion supported cyber crime network that has been targeting victims in foreign countries since 2022. This operation was executed in close coordination with FBI (USA).
- **Operation CHAKRA-III, has been initiated by CBI to combat and dismantle organized cyber enabled financial crime networks through a globally coordinated law enforcement response leveraging INTERPOL channels.**

Q51 . A

- **India's two fastest supercomputers built for weather forecasting —Pratyush and Mihir—**have broken into the top 100 list globally, surpassing the country's earlier ranking of 228 in November 2017.
- **Pratyush**, the 4. OPeta flops (PF) high performance computer at the Indian Institute of Tropical Meteorology, Pune ranks 39th according to the Top 500, a listing of supercomputers compiled university professors in the US and Germany.
- **Mihir**, with a capacity of 2.8PF, ranks 66th and is located at the National Centre for Medium Range Weather Forecast (NCMRWF) in Noida. Both the Supercomputers were installed by the Union ministry of earth sciences at a total cost of Rs 438.9 crore in January.
- **AIRAWAT** is India's AI supercomputer, and it's a key part of the country's digital infrastructure for scientific and technological advancement. It's located at the Centre for Development of Advanced Computing (C-DAC) in Pune.

Q52. C

- **South Korea's president apologised Saturday (December 7, 2024) for public anxiety caused by his short-lived attempt to impose martial law** earlier this week hours ahead of a parliamentary vote on impeaching him. **The President of South Korea declared martial law last week. That was, however, overturned by Parliament within hours.**
- **Zimbabwe has faced recurring droughts, which have significantly impacted its agricultural sector, leading to food insecurity and economic difficulties.** The country is highly dependent on rain-fed agriculture, and periodic droughts exacerbate the already fragile economy. In recent years, droughts have worsened the humanitarian situation, causing crop failures, water shortages, and contributing to rising food prices
- **Yemen has been embroiled in a devastating civil war since 2014**, involving the internationally recognized government of President Abd-Rabbu Mansour Hadi and **Houthi rebel forces**. The war has led to one of the world's worst humanitarian crises, with widespread famine, disease outbreaks, and displacement of millions of people.

IAS STUDY CIRCLE

Q53. B

- **Recently, the Union Cabinet** chaired by the Prime Minister Shri Narendra Modi has approved to confer the status of Classical Language to **Marathi, Pali, Prakrit, Assamese and Bengali** languages. The Classical Languages serve as a custodian of Bharat's profound and ancient cultural heritage, embodying the essence of each community's historical and cultural milestone.
- **Language Date of Notification as classical language**
- Tamil 12/10/2004
- Sanskrit 25/11/2005
- Telugu 31/10/2008
- Kannada 31/10/2008
- Malayalam 08/08/2013
- Odia 01/03/2014

Q54. D

- **Recently, people in Manipur celebrated the Mera Hou Chongba festival symbolizing unity amongst the indigenous people.**

- It is an annual festival observed in order to strengthen the cordial bond between the indigenous communities living in hills and valley people.
- It is only a festival wherein both hills and valley indigenous communities are observed together in the State.
- This festival has been celebrated right from the time of Nongda Lairen Pakhangba in the first Century C.E.
- Every year, in the month of Mera, which falls in September/October, this festival is celebrated, in which all the village Chiefs or Khullakpas and peoples from the surrounding hill areas fully take part

Q55. C

- **The Disaster Management (Amendment) Bill, 2024 was introduced in Lok Sabha on August 1, 2024.** The Bill amends the Disaster Management Act, 2005. The Act establishes: (i) National Disaster Management Authority (NDMA), (ii) State Disaster Management Authority (SDMA), and (iii) District Disaster Management Authority.
- **Preparation of disaster management plans:** The Act provides for constitution of a National Executive Committee and a State Executive Committee to assist NDMA and SDMA in performing their functions. A key function of these Committees is preparing national and state disaster management plans, respectively. NDMA and SDMA approve the respective plans and coordinate their implementation. **The Bill instead provides that NDMA and SDMA will prepare disaster management plans. (statement 1 is correct)**
- **Urban Disaster Management Authorities:** The Bill empowers the state government to constitute a separate Urban Disaster Management Authority for state capitals and cities with a municipal corporation. The Urban Authority will comprise the Municipal Commissioner as the chairperson, the District Collector as the vice chairperson, and other members specified by the state government. It will prepare and implement the disaster management plan for the area under it. **(statement 2 is incorrect)**
- **Formation of State Disaster Response Force:** The Act provides for constitution of a National Disaster Response Force for specialist response to disaster situations. **The Bill empowers the state government to constitute a State Disaster Response Force (SDRF).** The state government will define the functions of SDRF and prescribe the terms of service for its members. **(statement 3 is correct)**

Q56. B

- **National Legal Services Authority (NALSA)** was formed to provide free legal services to eligible candidates
 - **Article 39A** of the Constitution of India provides that State shall secure that the operation of the legal system promotes justice on a basis of equal opportunity, and shall in particular, provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disability. **(statement 1 is not correct)**
 - **Articles 14 and 22(1)** also make it obligatory for the State to ensure equality before law and a legal system which promotes justice on a basis of equal opportunity to all.
- **Objectives of Legal Services Authorities:**
 - Offer free legal aid and advice.
 - Promote legal awareness among the public.
 - Organize Lok Adalats for dispute resolution.
- **Institutions for Free Legal Services:**
 - National Level:
 - National Legal Services Authority (NALSA):
 - **Established under the Legal Services Authorities Act, 1987.**
 - The Chief Justice of India serves as the Patron-in-Chief.
 - Headquartered at the Supreme Court of India.
 - State Level:
 - State Legal Services Authorities:
 - Headed by the Chief Justice of the respective High Court as Patron-in-Chief.
 - District Level:

- District Legal Services Authorities:
- Chaired by the District Judge of the area.
- **Eligible Beneficiaries:** (statement 3 is not correct)
 - Women and children.
 - SC/ST individuals.
 - Industrial workers.
 - Victims of disasters (natural or industrial), violence, or calamities like floods or droughts.
 - Persons with disabilities.
- NALSA disburses funds and grants to State Legal Services Authorities and NGOs for implementing legal aid schemes and programs. (statement 2 is correct)

Q57. A

- The phrase “**Procedure Established by Law**” is found in **Article 21** of the Indian Constitution. It signifies that a **law is considered valid if it has been enacted by Parliament following the correct legislative procedure.** (Statement 1 is correct)
- Under this principle, a person may be deprived of their life or personal liberty only in accordance with the process prescribed by such a law.
- In the **landmark Maneka Gandhi v. Union of India (1978) case**, the Indian judiciary expanded the interpretation of “**procedure established by law**” to align it with the American concept of “**due process of law.**”
- This broader interpretation aimed to **safeguard an individual's Fundamental Rights by ensuring that laws and procedures are just, fair, and reasonable.**
- While it protects individuals from executive overreach by requiring adherence to established laws, **it does not inherently protect citizens' rights from unjust legislative actions.** (statement 2 is not correct)
- This limitation contrasts with the “**Due Process of Law,**” which provides broader protection by allowing judicial review for fairness, reasonableness, and justice.

Q58. D

- In a landmark judgment (**Property Owners’ Association v. State of Maharashtra**) with far-reaching implications for private property rights, a **nine-judge bench of the Supreme Court** clarified that **not all private property qualifies as “material resources of the community” under Article 39(b) of the Constitution.** (statement 1 is correct)
- The Court ruled that the government cannot acquire and redistribute privately owned property merely by labelling it as “material resources of the community” under Article 39(b).
- The case also examined the validity of **Article 31C**, which was introduced to protect laws aimed at: **Equitable distribution of resources for the common good, as mandated by Article 39(b), and preventing the concentration of wealth, as outlined in Article 39(c).**
- The Court addressed whether the government has the authority to classify private property as “**material resources of the community**” for redistribution purposes, emphasizing the limitations on this power to protect private property rights.
- **Article 39(b): Directs the state to ensure the equitable distribution of material resources for the common good.** (Statement 2 is correct)
- This judgment underscores the balance between the state's role in promoting social welfare and the need to safeguard individual property rights.
- **The right to property was downgraded from a Fundamental Right to a constitutional right through the 44th Amendment Act of 1978.** It is now protected under **Article 300A**, which states that no person shall be deprived of their property except by the authority of law. (Statement 3 is correct)

- This shift allows the government to acquire private property for a public purpose, provided it adheres to due legal process and offers fair compensation to the property owner.

Q59. A

- The Supreme Court ruled that States have the unlimited right to tax mining lands and quarries, independent of the Parliament's **Mines and Minerals (Development and Regulation) Act of 1957**.
- In July 2024, a nine-judge bench ruled by majority that **states have legislative competence to levy taxes on minerals and mineral-bearing lands in addition to the royalty imposed by the Centre**.
 - **Differences Between Royalties and Taxes:**
 - **Royalties:**
 - These are payments made to the government or a private owner for the right to use specific resources or intellectual property.
 - Typically, royalties are a percentage of the revenue, profits, or output derived from the use of the resource (e.g., mining minerals, extracting oil, or selling copyrighted material).
 - Royalties are specific and linked directly to resource usage.
 - Example:
 - A mining company pays a royalty to the government for extracting coal.
 - An author receives royalties from publishers for selling books.
 - **Taxes:**
 - Taxes are mandatory payments levied by the government on individuals, businesses, or property to generate revenue for public expenditures.
 - They apply broadly, covering income (income tax), property (property tax), and consumption (sales tax).
 - Taxes are not tied to any specific resource or right; they serve the general purpose of funding governmental activities and services.
 - Example
 - Individuals pay income tax on their earnings.
 - Businesses pay corporate tax on their profits.
 - Consumers pay sales tax on goods and services.

Q60. C

- The Fifth Schedule and Sixth Schedule of the Indian Constitution deal with the administration of tribal areas, but they are distinct in their scope, geographical applicability, and the powers they confer on different authorities. Here's a detailed comparison and the relevance of the statements in the question:
- **Schedule Area:**
 - The provisions for the administration and control of Scheduled Areas are outlined in the **Fifth Schedule of the Indian Constitution**. These provisions address Scheduled Areas and Scheduled Tribes in states **other than Assam, Meghalaya, Tripura, and Mizoram**.
 - The **President of India** holds the authority to declare any area as a Scheduled Area.
 - The President can also modify the boundaries of these areas (including altering, increasing, or decreasing them) after consulting the Governor of the respective state.
 - The Governor is required to submit an annual report to the President regarding the administration of Scheduled Areas.
 - **The Governor is also empowered to issue directives specifying that any law passed by Parliament or the state legislature:** (Statement 1 Is correct)
 - Shall not apply to a Scheduled Area, or
 - Shall apply with specified modifications or exceptions, as deemed necessary for the welfare of the Scheduled Tribes.
- **Tribal Areas:**

- The Sixth Schedule of the Indian Constitution addresses the administration of Tribal **Areas in Assam, Meghalaya, Tripura, and Mizoram**.
- The Schedule initially divided these regions into two parts, but subsequent amendments expanded it to **four parts and ten areas**.
- These areas are administered as **autonomous districts**, which remain under the executive authority of the respective state.
- The districts are granted autonomy but are not independent of state oversight.
- **The Governor of the concerned state holds the authority to organize or reorganize autonomous districts.** (statement 2 is not correct)
- This includes:
 - Increasing or decreasing their area.
 - Altering their boundaries.
- For districts with multiple tribes, the Governor can further divide them into autonomous regions to better represent tribal interests.

Q61. D

- **Recent Constitutional Amendments**
- **103rd Constitutional Amendment Act, 2019:**
 - Added Clause 6 to **Articles 15 and 16**.
 - Introduced a 10% reservation for Economically Weaker Sections (EWS) in government jobs and educational institutions.
 - Applicable to those not covered under existing reservations for Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs).
- **104th Constitutional Amendment Act, 2019:**
 - Extended the reservation of seats for Scheduled Castes (SCs) and Scheduled Tribes (STs) in the Lok Sabha and State Legislative Assemblies from 70 years to 80 years, ensuring it remains in effect until 2030.
 - Removed the provision for the President to nominate two members of the Anglo-Indian community to the Lok Sabha and State Legislative Assemblies.
 - **Amended Article 334** to reflect these changes.
- **105th Constitutional Amendment Act, 2021:**
 - Restored the state governments' power to identify and maintain their respective lists of Other Backward Classes (OBCs).
 - **Amended Article 342A**, reversing the Supreme Court ruling that had limited states' authority in this regard.
 - Ensures federal autonomy in addressing regional and social inequities.
- **106th Constitutional Amendment Act, 2023:**
 - **Allocates 33% reservation of seats** in the Lok Sabha and State Legislative Assemblies for women.
 - Received Presidential assent from Smt. Droupadi Murmu on 28th September 2023.
 - The provisions will come into effect upon notification by the central government.

Q62. B

Gram Nyayalayas:

- The Supreme Court recently said the establishment of Gram Nyayalayas across the country would help improve access to justice.
- Gram Nyayalayas, or village courts, are established under the **Gram Nyayalayas Act, 2008**, to provide speedy and affordable access to justice for rural areas in India.

- The Act extends across India, except in Nagaland, Arunachal Pradesh, Sikkim, and the tribal areas covered under the Sixth Schedule of the Constitution.
- Deliver inexpensive justice at the doorsteps of rural populations.
- **State governments are authorized to establish one or more Gram Nyayalayas in consultation with the respective High Court at the intermediate Panchayat level or a cluster of Panchayats. (statement 1 is not correct)**
- The Act does not mandate the establishment of Gram Nyayalayas, leaving it to the discretion of the states.
- As per **Section 4 of the Act**, the headquarters of a Gram Nyayalaya is located in the Panchayat or another place as notified by the state government.
- **Each Gram Nyayalaya is headed by a Nyayadhikari, appointed by the State Government in consultation with the High Court. (Statement 2 is correct)**
- The Nyayadhikari has **the powers and privileges equivalent to a Judicial Magistrate of First Class**.
- The Nyayadhikari is required to periodically visit villages and conduct hearings at locations other than the headquarters to resolve cases promptly.
- State governments can define and revise the territorial jurisdiction of Gram Nyayalayas based on local needs and circumstances.
- Gram Nyayalayas handle criminal cases, civil suits, claims, and disputes listed in the First Schedule and Second Schedule of the Act.
- Criminal cases are to be resolved following summary procedures to expedite justice delivery.
- The Gram Nyayalaya shall not be bound by the rules of evidence provided in the Bharatiya Sakshya Adhiniyam, 2023, but guided by the principles of natural justice, subject to any rule made by the High Court. (statement 3 is correct)

Q63. A

- The Concurrent List (List III) in the Seventh Schedule of the Indian Constitution contains subjects on which both the Centre and State governments can make laws. However, in the event of a conflict, Article 254 gives overriding power to the Central law, except when the State law has received Presidential assent.
- **Both the Parliament and State Legislatures can legislate on subjects in the Concurrent List.**
- If a State law conflicts with a Central law, the **Central law prevails (Article 254)**. (statement 1 is correct)
- A State law inconsistent with a Central law can still operate in that state if it has received Presidential assent.
- **The Concurrent List currently has 52 subjects (originally 47).**
 - Education: Policy, institutions, and administration.
 - Forest: Conservation, afforestation, and wildlife management.
 - Criminal Law and Procedure: Laws related to offenses and criminal justice.
 - Marriage and Divorce: Regulation of family laws.
 - **Economic and Social Planning:** Economic policy and welfare planning. (statement 2 is not correct)
 - Trade Unions: Regulation of labor unions and industrial disputes.
 - Charities and Endowments: Laws governing charitable institutions.
 - Population Control: Family planning and welfare measures.

Q64. A

- The Comptroller and Auditor General of India (CAG), has been re-elected as the External Auditor of the World Health Organization (WHO) for a four-year term.
- **The Comptroller and Auditor General (CAG)** is the supreme authority responsible for auditing the financial operations of the central and state governments, ensuring accountability and transparency in public finances.
- The office of the CAG is established as an **independent body under Articles 148 to 151 in Chapter V of the Indian Constitution**.

- The Constitution safeguards the autonomy and impartiality of the CAG.
- **Functions of the CAG:**
 - **Audits all expenditures from the Consolidated Fund of India, Consolidated Funds of states, and Union Territories with legislative assemblies.** (Statement 1 is correct)
 - Audits expenditures from the Contingency Fund of India and the Public Account of India, as well as their state counterparts.
 - Audits accounts related to trading, manufacturing, profit and loss, balance sheets, and subsidiary accounts of central and state government departments.
 - Audits the receipts and expenditures of bodies and authorities substantially financed by central or state revenues, such as government companies and statutory corporations.
 - **Audits the accounts of local bodies and other authorities when requested by the President or Governor.** (statement 2 is not correct)
 - Advises the President on the format for maintaining accounts at the central and state levels.
 - **Before 1976, the Comptroller and Auditor General (CAG) was responsible for compiling and maintaining the accounts of both the Central and State Governments. However, this function was discontinued after the 1976 reforms.** (statement 3 is not correct)
 - Presently, the accounts are maintained and compiled by the Controller General of Accounts (CGA) at the Central level and by respective finance departments at the State level.

Q65 . B

The Supreme Court's landmark verdict on the sub-classification of Scheduled Caste (SC) and Scheduled Tribe (ST) quotas marked a significant advancement in equality jurisprudence. Chief Justice of India (CJI) D.Y. Chandrachud highlighted the concept of "substantive equality."

Substantive Equality

- Substantive equality seeks to achieve genuine fairness by acknowledging and addressing the unique needs, circumstances, and historical disadvantages faced by different societal groups.
- Unlike formal equality, which promotes identical treatment for everyone regardless of their background, substantive equality aims to ensure equitable outcomes by taking these differences into account.
- **Key Principles of Substantive Equality**
 - **Recognizing Historical Disadvantages**
Substantive equality acknowledges the long-standing discrimination and systemic disadvantages certain groups have faced. These historical injustices continue to affect their opportunities and social outcomes.
 - **Differentiated Treatment for Equity**
Achieving fairness may require treating groups differently to address their unique challenges. This approach ensures that disadvantaged groups receive targeted support to overcome structural barriers.
 - **Beyond Equal Treatment**
Substantive equality emphasizes outcomes rather than just equal treatment under policies and laws. It ensures that equality is reflected in both opportunities and results.
 - **Tackling Systemic Inequalities**
Substantive equality involves identifying and addressing systemic barriers embedded in legal, economic, social, and cultural frameworks that perpetuate inequality. It focuses on reforms to create a more inclusive and equitable society.
- **Examples in Practice:**
 - **Affirmative Action:**
Reservation policies in India for Scheduled Castes, Scheduled Tribes, and Other Backward Classes are aimed at addressing historical disadvantages and ensuring equitable representation.
 - **Gender-Based Interventions:**
Laws and policies such as maternity leave, women's reservations in political bodies, and equal pay initiatives aim to achieve substantive equality for women.

- **Educational Support Programs:**

Free or subsidized education for economically weaker sections or scholarships for marginalized communities.

Q66. C

Indian Presidential Election

- The election of the President of India is conducted through an **Electoral College system, involving both national and state-level lawmakers**. This process is overseen by the Election Commission (EC) of India.
- Electoral College Composition
 - Elected Members of both Houses of Parliament (Rajya Sabha and Lok Sabha).
 - Elected Members of the Legislative Assemblies of States and Union Territories (MLAs).
- Candidates intending to contest must file a nomination, **supported by 50 proposers and 50 seconders**.
- **An elector can propose or second the nomination of only one candidate.** (Statement 1 is correct)
- **Vote Weightage**
 - **The value of each vote cast by MPs and MLAs is not uniform:**
 - MPs: Each vote is valued at 708.
 - MLAs: **The vote value varies by state and is calculated based on the state's population in proportion to the number of MLAs in its Legislative Assembly.** (Statement 2 is correct)
 - Formula: Value of one MLA's vote = $(\text{State population} \div \text{Total MLAs}) \div 1000$.
 - **Uttar Pradesh: Highest value at 208.** (Statement 3 is correct)
 - Maharashtra: Vote value is 175.
 - Arunachal Pradesh: Vote value is 8.
- A candidate **must secure more than 50% of the total valid votes cast + 1 to win**.
- The system follows **proportional representation through the single transferable vote**, with voting done by secret ballot.
- Voters rank candidates in order of preference on the ballot paper.
- Votes are calculated to ensure the elected President represents the majority opinion of the Electoral College.

Q67. A

- The Public Accounts Committee (PAC) will hold a performance review of “regulatory bodies established by Act of Parliament”, such as the Securities and Exchange Board of India (SEBI).
- The Public Accounts Committee (PAC) is a parliamentary committee **established to audit the revenue and expenditure of the Government of India**. It acts as a critical oversight body to ensure accountability in government spending.
- **Purpose:**
 - To examine the audit report of the Comptroller and Auditor General (C&AG) after it is presented in Parliament.
 - To verify that government expenditure aligns with the scope of the grants approved by Parliament.
 - Serves as a check on government expenditure.
 - Assistance: The C&AG assists the committee during its investigations.
- The PAC is **one of the oldest parliamentary committees in India, established in 1921**.
- From 1921 to 1950, the Finance Member chaired the committee, and its secretarial functions were **managed by the Finance Department (later the Ministry of Finance)**.
- Post 26 January 1950, with the implementation of the Constitution, the PAC became a parliamentary committee under the control of the Speaker of the Lok Sabha. Its secretarial responsibilities were transferred to the Lok Sabha Secretariat.
- Composition:
 - 22 Members in total: 15 from the Lok Sabha and up to 7 from the Rajya Sabha.
 - Election Process:

- Members are elected annually by their respective houses based on proportional representation using a single transferable vote.
- Members serve for a term of one year.
- **Chairperson is appointed by the Speaker from the Lok Sabha members of the committee.**
- Since 1967-68, the Chairperson has **traditionally been a member of the Opposition.**
- **Ministers are ineligible for committee membership.**
- If a member is appointed a Minister, their PAC membership ceases from the date of the appointment.

Q68. C

Public Examinations (Prevention of Unfair Means) Bill, 2024

The Public Examinations (Prevention of Unfair Means) Bill, 2024, has been introduced in Lok Sabha, aiming to prevent “Unfair Means” in order to “bring greater transparency, fairness and credibility to the Public Examinations System.

- **Key Provisions of the Bill**
 - Definition of Public Examination:
 - A public examination is defined under Section 2(k) as any test conducted by a “public examination authority” listed in the Schedule, such as UPSC, SSC, RRBs, IBPS, and NTA.
 - Other central government ministries, departments, and their offices involved in recruitment are also covered.
 - The central government may add more authorities via notification.
- **The Bill prescribes strict punishments for malpractice such as general offenders face 3–5 years imprisonment and fines up to ₹10 lakh, with additional imprisonment for non-payment of fines. (Statement 2 is correct)**
- **Service providers involved in illegal practices can be fined up to ₹1 crore and made to reimburse examination costs.**
- Unfair means, as outlined in **Section 3**, include acts like **leaking question papers, tampering with documents or systems, and creating fake websites or admit cards for monetary gain.**
- Investigations must be conducted by **officers of at least the rank of Deputy Superintendent of Police or Assistant Commissioner of Police. (Statement 1 is correct)**
- Additionally, the Bill serves as a model draft for states to adopt at their discretion to curb exam-related malpractices.
- It also mandates the establishment of a **High-Level National Technical Committee to devise robust IT and physical security protocols**, develop national standards, and ensure efficiency in the conduct of examinations.

Q69. C

Money Bill:

- **As per Article 110(1) of the Constitution, a Money Bill can only be introduced in the Lok Sabha and not in the Rajya Sabha.** Furthermore, only the recommendation of the President is required before its introduction.
- Article 108 of the Constitution states that a joint sitting of Parliament is **not applicable to Money Bills.** If the Rajya Sabha rejects a Money Bill or suggests amendments, the Lok Sabha can reject these amendments, and the Bill is considered passed after 14 days.
- Defined under Article 110, a Money Bill deals with:
 - Imposition, abolition, alteration, or regulation of taxes.
 - Regulation of borrowing by the government.
 - Custody and operation of the Consolidated Fund of India and Contingency Fund of India.

- Appropriation of money from the Consolidated Fund.
- Declaration of any expenditure as charged upon the Consolidated Fund.
- Matters incidental to these topics.
- Key Restriction: A Money Bill cannot include provisions unrelated to the above subjects.
- **All Money Bills are Financial Bills:** A Money Bill is a subset of Financial Bills and falls under the larger category.

Finance Bill:

- Finance Bill (I): Includes provisions similar to a Money Bill but may include matters outside the ambit of Article 110. **It is introduced only in the Lok Sabha** (like a Money Bill). Treated similarly to a Money Bill for all purposes. (statement 1 is not correct)
- Finance Bill (II): Includes provisions related to revenue/expenditure but is not a Money Bill. It can be introduced in either House of Parliament. Can result in a deadlock if the two Houses disagree, and this may require a joint sitting of Parliament under Article 108.
- Finance Bill (II): A Finance Bill includes matters related to revenue and expenditure but may also have other provisions (e.g., amendments to other Acts unrelated to Article 110). Hence, not all Finance Bills qualify as Money Bills.
- **Not All Financial Bills are Money Bills:** Financial Bills that do not exclusively deal with matters under Article 110 are categorized as Financial Bill (II) or (III). These bills differ in their legislative procedure:
- A Financial Bill (II) can be introduced in either House of Parliament.
- Financial Bill (II) is subject to the joint sitting provision.

Q70. C

- **The Directive Principles of State Policy (DPSP), outlined in Part IV of the Indian Constitution (Articles 36–51), are non-justiciable, meaning they cannot be enforced by the courts. However, they are fundamental in the governance of the country and serve as guidelines for the state to frame laws and policies aimed at achieving socio-economic justice and welfare.**
- DPSPs are not legally enforceable by courts, as explicitly mentioned in Article 37 of the Constitution. The judiciary cannot compel the government to implement them.
- While parliamentary intervention is often necessary to implement DPSPs through laws, this statement does not capture their essence. DPSPs are not enforceable in any sense but act as a moral and political obligation for the legislature and executive
- **Article 37 of the Constitution states that DPSPs are not enforceable by any court but are fundamental to governance.** They set the direction for achieving the ideals of justice, equality, and liberty.
- They influence policymaking in areas such as education, health, and economic equality, guiding the state to create a welfare-oriented society.
- DPSPs are not binding on either the judiciary or the legislature. They are non-justiciable and serve as ideals that the state should strive to achieve, rather than binding legal mandates.

Q71. B

- **Buddhism has constantly refined and evolved through conventions,** various practices and councils. Over the period, Buddhist monastic communities have convened together to recite approved texts of scriptures and to settle Buddhist doctrinal disputes. These conventions or formal gatherings are called '**Buddhist Councils**'.
- **The First Buddhist Council was held in 483 B.C.,** after the Mahaparinirvana of the Buddha, to preserve the purity of the teachings of Buddha. Various senior Buddhist scholars like Upali and Anand participated. Ananda was the reciter for Dhamma, and Upali was the reciter for the Vinaya Pitaka.
 - **Venue: Rajagriha (Modern Bihar).** (pair 1 is correct)
 - **Patronage: Ajatashatru** (Haryanka dynasty)
 - **President: Mahakasyapa.**

- Objective: Its purpose was to maintain the purity of the teachings of the Buddha.
- **Outcome: Compilation of Vinaya Pitaka and Sutta Pitaka:**
- **Vinaya Pitaka:** It deals with the rules and regulations of the sangha or monastic order under the direction of Upali (close disciple of Buddha).
- **Sutta Pitaka:** It consists of various aspects of Buddha's teachings. It was developed under the direction of Ananda.
- **The Second Buddhist Council** was convened mainly to settle disputes about the true interpretation of the Buddha's teachings and the 'Ten Points' dispute regarding the relaxed rules of discipline followed by certain monks, especially the monks of Vaishali.
 - **Venue: Vaishali (Bihar)** (pair 2 is incorrect)
 - **Patronage: Kalasoka** (Shishunaga dynasty)
 - **President: Sabakami**
 - **Objective:** To settle the dispute emerging out of multiple interpretations and establish the true path of Buddha.
 - **Outcome:** Emergence of the two different schools of thought- Sthaviravadins and Mahasamghikas.
 - **Sthaviravadins:** It advocated strict adherence to the original tradition of Buddhism and compliance with the pure teachings of the Buddha.
 - **Mahasamghikas:** It advocated a liberal attitude towards the rules prescribed in the Pitakas.
- **The Third Buddhist Council was convened by Asoka at the request of Venerable Moggalliputta Tissa.**
 - **Venue: Patliputra** (modern Patna). (pair 3 is incorrect)
 - **Patronage: Asoka** (Mourya)
 - **President: Moggalliputta Tissa.**
 - **Objective:** It was primarily held to eliminate corruption practices of bogus monks from Sangha.
 - **Outcome:**
 - **The final version of Tripitakas was completed in this council:** The last Abhidhamma Pitaka (dealt with the philosophy of Buddha) was compiled during this council. Other two were the Sutta Pitaka, the Vinaya Pitaka. They were written in the Pali language.
 - **Theravada school:** The approved teaching and philosophy of this Council term as Theravada.
- **The Fourth Buddhist Council was organised on the advice of a famous Buddhist monk- Parsva.** This council is famous for the formal separation of the Buddhist sangha into Hinayana and Mahayana based on sharp doctrinal differences. This council was organised under the patronage of Kanishka.
 - **Venue: Kashmir** (pair 4 is correct)
 - **President: Vasumitra**
 - **Asvagoshya**, a famous Buddhist scholar, participated in this council.
 - **Outcome:** The emergence of Hinayana (Lesser Vehicle) and Mahayana (Greater Vehicle) schools of Buddhism during this council.
 - **Vibhasha sastras:** It is a compilation of the commentaries and discussion on some difficult topics discussed during the council.

Q72. A

- **The Astadhyayi** ("Eight Chapters") is a foundational text of Sanskrit grammar composed by **Panini**, a legendary grammarian of ancient India (circa 5th–4th century BCE). The text consists of nearly 4,000 concise sutras (aphorisms) that systematically define Sanskrit grammar and structure.
- **The Mahabhasya** ("Great Commentary") is a significant commentary on Panini's Astadhyayi, written by the grammarian and philosopher **Patanjali** (circa 2nd century BCE). It delves deeply into the rules and structure of Sanskrit grammar, offering clarifications, examples, and interpretations of Panini's aphorisms.
- **The Varttika** is a critical and supplementary commentary on Panini's Astadhyayi. Written by **Katyayana** (circa 3rd century BCE), it provides amendments, clarifications, and additional grammatical rules to address ambiguities or gaps in Panini's system.

Q73. B

- **Kalibangan** is an important **Indus Valley Civilization site**, but it is located in **Rajasthan**, not Haryana.
- **Jorwe** is a notable **Chalcolithic site in Maharashtra**, associated with the Jorwe culture known for its distinctive pottery and settlement features.
- **Puhar (also known as Kaveripattinam)** was an **ancient port city in Tamil Nadu** and a significant trading hub during the Sangam period.
- **Kanganahalli** is an important **Buddhist site where an ancient Mahastupa was built**. It is on the left bank of the Bhima river in Chitapur taluk, Kalaburagi district in **Karnataka**, India. **The first inscribed portrait of Ashoka (surrounded by female attendants and queens) found at Kanaganahalli.**

Q74. D

Montagu Chelmsford Reforms and the Government of India Act 1919:

- The Government of India Act 1919, based on the Montagu Chelmsford Report, was introduced to reform the governance of British India. It was prepared under the guidance of Edwin Montagu, Secretary of State for India, and Lord Chelmsford, the Viceroy of India.
- **Key Provisions of the Act**
 - Diarchy was introduced at the provincial level, dividing governance between Indian ministers and British officials.
 - Indian ministers were given control over certain provincial subjects, while the British retained authority over finance and law.
 - The Viceroy held significant power at the central level, with minimal Indian involvement in crucial areas like defence and foreign affairs.
- **Provincial Government**
 - The Act implemented the concept of diarchy in provinces, dividing powers between Indian and British ministers.
 - Transferred Subjects Areas like education, public health, agriculture, and local self-government were handled by elected Indian representatives.
 - Reserved Subjects: Critical areas such as finance, law enforcement, and land revenue remained under the control of British governors. **(Statement 2 is not correct)**
 - Governors had the authority to veto decisions, issue ordinances, and intervene in matters concerning reserved subjects.
- **Central Government Executive**
 - Administrative responsibilities were divided into central and provincial lists.
 - The Governor-general retained authority over reserved subjects and could restore budgets, approve rejected bills, and issue ordinances.
 - The Viceroy held central executive power, assisted by an eight member council, where only three Indians participated in ceremonial roles.
 - Key areas like defence, foreign policy, and communications remained under British control.
 - The salary of the Secretary of State for India was paid by the British exchequer.
 - The Act established the post of the High Commissioner for Indian London to manage British Indian relations and represent Indian interests.

Q75. C

- **Important Governor General of India - Key Contributions of British Governors-general in India**
- **Sir Charles Metcalfe (Governor-general of India, Interim Tenure)**
 - Press Freedom: Known as the "Liberator of Indian Press" for granting complete freedom to journalists.
 - Faced opposition to his liberal press policies both in India and Britain.
 - Played a pivotal role in negotiating the Amritsar Treaty (1809) with Ranjit Singh, ensuring stability in Punjab until the First Sikh War (1845).
 - Worked to abolish practices such as slavery, sati, and infanticide in the Delhi region (1812).
 - Spent 38 years in India, arriving during Lord Wellesley's tenure and witnessing the rise of British power.
 - Succeeded by Lord Auckland in 1836 due to political challenges in England.
- **Lord Canning (Governor General and First Viceroy of India)**
 - Took office on February 28, 1856, amidst tensions created by the Doctrine of Lapse introduced by Lord Dalhousie.
 - The Revolt of 1857 broke out during his tenure, marking a significant challenge to British rule.
 - Oversaw the transfer of power from the East India Company to the British Crown through the Government of India Act, 1858.
 - Became the first Viceroy of India and abolished the Doctrine of Lapse to appease Indian princes.
 - Reorganized the Viceroy's Council, introducing specialized departments like finance, law, and defense, a model later known as the "Canning business model."
- **Lord Wellesley (Governor General)**
 - Subsidiary Alliance System: Introduced the system requiring Indian rulers to maintain British troops and avoid foreign alliances without British approval.
 - The Nizam of Hyderabad was the first to sign, followed by Mysore, Jaipur, and Awadh.
 - Fourth AngloMysore War (1799): Defeated Tipu Sultan at the Siege of Seringapatam, restoring the Wodeyar dynasty in Mysore and ending French influence.
 - Second AngloMaratha War (1803-1805): Leveraged internal Maratha conflicts to expand British control, leading to victories like the Battle of Assaye and the Treaty of Bassein.
 - Introduced the Censorship of the Press Act (1799) to restrict publications and control public sentiment, requiring prior approval for media content.
 - Established Fort William College (1800) in Kolkata to train British officials in Indian languages and culture.
 - Training was later shifted to Haileybury in England (1806).

Q76. A

Peasant Movement in Malabar, Kerala

- A strong peasant movement emerged in the Malabar region of Kerala, largely due to the efforts of Congress Socialist Party activists.
- These activists began working among the peasants in 1934, visiting villages and establishing Karshaka Sanghams (Peasant Associations).
- The movement focused on key demands to address the exploitation of peasants by landlords, including:
 - Abolition of feudal levies or akramapirivukal.
 - Stopping the practice of policceluthu (renewal fees).
 - Ending advance rent collections.
 - Preventing tenant evictions by landlords under the guise of personal cultivation.
 - Demanding reductions in tax, rent, and debt burdens.
 - Ensuring fair grain measurement practices by landlords.
 - Eliminating corruption by landlords' managers.

Q77. A

Key Events in the Indian Independence Movement:

- **Lahore Congress Session (December 1929)**
 - Jawaharlal Nehru, with strong support from Mahatma Gandhi, was elected president of the Congress to symbolize the growing enthusiasm among the youth.
 - Nehru's leadership reflected his pivotal role in popularizing the idea of Purna Swaraj (complete independence).
 - The Congress declared complete independence as its ultimate goal.
 - It was decided to boycott the Round Table Conference.
 - The Congress Working Committee was authorized to initiate a civil disobedience campaign, including non-payment of taxes.
 - Members of legislatures were encouraged to resign from their seats.
- **Dandi March (March-April 1930)**
 - On March 2, 1930, Gandhi informed the Viceroy of his plan to march 240 miles from Ahmedabad to the coastal village of Dandi in Gujarat.
 - The march commenced on March 12, 1930, and concluded on April 6, when Gandhi broke the salt law by collecting salt from the seashore.
 - This act of defiance marked the beginning of the Civil Disobedience Movement and symbolized the Indian resolve to reject British imposed laws.
 - Gandhi urged people across the nation to produce their own salt, thereby violating the salt laws and undermining British authority.
- **First Round Table Conference (November 1930)**
 - Held between 1930 and 1932, these conferences aimed to discuss constitutional reforms in India, as recommended by the Simon Commission.
 - The First Round Table Conference was inaugurated on November 12, 1930, by King George V at the House of Lords, chaired by British Prime Minister Ramsay MacDonald.
 - This conference marked the first instance where British and Indian representatives met as equals.
 - The Indian National Congress and prominent business leaders boycotted the meeting, but representatives from other Indian groups attended.
- **Gandhi Irwin Pact (February 14, 1931)**
 - On January 25, 1931, Gandhi and members of the Congress Working Committee (CWC) were released unconditionally from prison.
 - The CWC authorized Gandhi to negotiate with the Viceroy, leading to the signing of the Gandhi Irwin Pact in Delhi on February 14, 1931.
 - Known as the Delhi Pact, it recognized the Congress as a mass movement representing millions of Indians.
 - It laid the groundwork for the Government of India Act 1935, which eased the diarchy system and increased Indian representation in the legislature.

Q78. C

- **Revolutionary Activities Abroad**
 - Indian revolutionaries also carried out significant activities abroad to further the independence movement. The need for shelter, the freedom to publish revolutionary literature, and the acquisition of arms drove many to operate from foreign lands.
- **Key Organizations and Events**
 - Indian Home Rule Society (1905)
 - Founded by Shyamji Krishna Varma in London, it aimed to promote Indian nationalism and support Indian students.

- Established India House, a hub for revolutionary activities and a scholarship scheme for radical youth.
- Published the journal The Indian Sociologist.
- Members included V.D. Savarkar, Madan Lal Dhingra, and others.
- After Dhingra assassinated CurzonWyllie in 1909, British authorities cracked down, forcing leaders like Varma and Madam Bhikaji Cama to move to Europe.
- New revolutionary centers emerged in Paris and Geneva, where Bhikaji Cama published Bande Mataram and collaborated with French socialists.
- Ghadar Party (1913)
 - Formed in the United States by migrated Indians, primarily Sikhs, under the leadership of Lala Har Dayal, Sohan Singh Bhakna, Kartar Singh Sarabha, and others. **(Statement 2 is not correct)**
 - Published The Gadar, a newspaper advocating revolution to overthrow British rule in India.
 - The movement gained support among Indians in the U.S. and Canada, many of whom had migrated for economic opportunities.
- Komagata Maru Incident (1914)
 - A Japanese ship carrying Indian immigrants to Canada was denied entry and forced to return to Calcutta.
 - Upon arrival, passengers protested and faced harsh suppression, leading to deaths and fueling revolutionary fervor in Punjab.
- World War I Activities
 - Revolutionaries sought assistance from Germany and Muslims in Iran, Iraq, and Afghanistan to overthrow British rule.
 - Raja Mahendra Pratap and Sufi Amba Prasad led missions to rally support from Afghan and Middle Eastern leaders.
 - Virendranath Chattopadhyay operated from Berlin, building networks for the Indo-German plot.

Q79. C

- The 50th session of the Indian National Congress was held in Faizpur, Jalgaon district. The session was the first to be held in a rural setting.
- During 1937, the Indian National Congress was going through changes in its political, social and economic outlook, leaning towards the demands of the masses.
- The influence of the Kisan Manifesto could be seen in the agrarian programme embraced by the Congress at its Faizpur session.
- The agrarian programme of the Indian National Congress included the demands for the reduction of land tax and rent by 50%, ensuring a minimum wage for agricultural workers, recognition of peasant unions and the complete abolition of feudal levies.
- There was a shift towards democratic and anti-feudal movements in the princely states. In Jawaharlal Nehru's presidential speech, he insisted that the aim of the INC and the Indian people should be establishing socialism and defeating capitalism. He critiqued the section of the INC that worked with a reformist mentality with the British Raj and proclaimed that Congress should identify its vested interests with that of the working classes.

Q80. A

- **Wood's Despatch (1854): Magna Carta of English Education in India**

- In 1854, Charles Wood prepared a comprehensive despatch outlining a plan for education in India, which became known as the "Magna Carta of English Education in India." This was the first detailed strategy for promoting education in the country.
- Key Provisions of Wood's Despatch:
 - Government Responsibility for Education:
 - The despatch emphasized that the Government of India should take responsibility for educating the masses.
 - It aimed to reject the 'downward filtration theory' in principle, promoting direct access to education for all. **(Statement 1 is not correct)**
- Systematic Hierarchical Structure:
 - A structured educational system was proposed:
 - Vernacular primary schools in villages at the base.
 - AngloVernacular high schools at the next level.
 - Colleges at the district level affiliated with universities in major cities.
 - Universities were to be established in Presidency towns like Calcutta, Bombay, and Madras.
 - It proposed a grantsinaid scheme to encourage private participation in education.
 - English was recommended as the medium for higher education, while vernacular languages were to be used at the school level.
- **Hunter Commission (1882):** Key Recommendations -The Hunter Commission, established in 1882 under William Wilson Hunter, primarily focused on reforms in elementary and secondary education in India.
 - Urged the state to prioritize the expansion and improvement of primary education.
 - Recommended that primary education be imparted in the local language.
 - Suggested transferring the management of primary education to district and municipal bodies under the Local Self-government Act.
 - Highlighted the lack of educational facilities for females, especially outside presidency towns, and advocated for their extension.
 - Promoted Indian participation in private education and discouraged reliance on missionary schools.
 - Composition of the Commission: Chairman: William Wilson Hunter, an ICS officer and member of Lord Ripon's Executive Council.
- **Members:**
 - 20 members in total, including 7 Indians.
 - Prominent Indian members included:
 - Anand Mohan Bose
 - K.T. Telang
 - Sayed Mahmud
 - Bhudev Mukherjee
 - Hari Gulam
 - Maharaja Jitendra Mohan Tagore **(Statement 2 is not correct)**
- The Hunter Commission laid the groundwork for decentralizing education and improving access, especially for women and marginalized communities.

Q81. C

- **Foreign Travellers during Medieval India**
 - **Marco Polo (1292-1294 CE):**
 - A Venetian explorer, Marco Polo visited the Indian subcontinent during his travels to the court of Kublai Khan in China.

- He explored southern India during the reign of Rudramma Devi of the Kakatiya dynasty and Pandyan ruler Madverman.
- Observations: Documented the flourishing trade, industries, and economic activities in southern India in the late 13th century.
- **Ibn Battuta (1333 CE):**
 - A renowned Moroccan traveler, Ibn Battuta visited India during the reign of Muhammad bin Tughluq.
 - He served briefly as a judge in the Sultan's court in Delhi.
 - His travelogue, Rihla, provides a detailed account of life in Delhi, highlighting the grandeur of the court, peculiarities of the Sultan, administrative systems, law and order, and sociocultural aspects under Tughluq's rule.
- **Domingo Paes (1520-1522 CE):**
 - A Portuguese traveler, Domingo Paes visited the Vijayanagara Empire during the reign of Krishnadeva Raya.
 - Observations: He described the empire's grandeur, wealth, efficient administration, thriving trade, and powerful military. Paes also admired the extensive territory and prosperity under Krishnadeva Raya.

Q82. D

- **Alauddin Khilji (1296-1316 AD)**
 - Introduced a system of paying soldiers in cash.
 - Controlled and monitored prices as soldiers received modest salaries.
 - Created an extensive intelligence network to prevent black marketing and hoarding of essential commodities.
 - Appointed Shahana i Mandi to oversee and regulate the prices of critical goods.
 - Maintained a large and well-organized standing army.
 - Introduced horse branding (dagh) and detailed military registration to prevent fraud.
 - Paid salaries to soldiers in cash.
 - Assigned Ariz i Mumalik to oversee military appointments.
 - Established a dedicated revenue department called Diwani Muskharaj. **(Statement 2 is not correct)**
 - Implemented a scientific system for land measurement and revenue calculation.
 - Imposed jaziya on non Muslims.
 - Levied strict taxes on sardars, jagirdars, and ulemas.
 - Though illiterate, Alauddin Khilji actively supported arts and education.
 - Patronized notable scholars like Amir Khusrau and Mir Hasan Dehlvi.
 - Founded the city of Siri and expanded the Qutabi mosque.
 - He built the Alai Darwaza in 1311. The Alai Darwaza is the southern gateway of the QuwwatullIslam Mosque in the Qutub Minar complex
 - Started constructing the Alai Minar near Qutb Minar but could not complete it.

Q83. A

In the Vedic period, women held a respected and privileged status in society. As the head of the household, the wife exercised authority over slaves and actively participated with her husband in religious rituals. The Vedas highlight several prominent women scholars, such as Gargi, Maitreyi, Viswambhara, and Apala.

- **Gargi:**
 - Daughter of sage Vachaknu and a Vedic prophetess.

- Composed hymns exploring profound questions about the origin of human existence.
- Participated in the 'Brahma yajna' organized by King Janaka of Videha.
- Maitreyi:
 - A philosopher and prophet mentioned in the Rig Veda, with around 10 hymns attributed to her.
 - Contributed to her husband's spiritual and intellectual growth.
 - Married to Yajnavalkya, who had two wives: Katyayani, a woman of ordinary disposition, and Maitreyi, a scholar wellversed in scriptures.
- Other notable women of the Vedic period include Ghosha, Lopamudra, Sakata, and Nivavari, who made significant contributions to Vedic literature and philosophy.

Q84. D

Vaisheshika School of Philosophy:

- The Vaisheshika school emphasizes the physicality of the universe and presents a realistic and objective philosophy governing it.
- The school was founded by Kanada, who authored the foundational text of the Vaisheshika philosophy.
- The philosophy identifies five primary elements—fire, air, water, earth, and ether (sky)—as the building blocks of everything in the universe.
- These elements are collectively referred to as Dravya (substances).
- Reality, according to Vaisheshika, is categorized into distinct groups: substance, action, attribute, genus, inherence, and specific qualities.
- The Vaisheshika school developed an atomic theory, proposing that all material objects are composed of atoms.
- This approach reflects the school's inclination toward a scientific understanding of nature.

Q85. D

- **Qutbuddin Aibak (c. 1206–1210 CE)**
 - Established the first independent Turkish rule in the Delhi Sultanate and took the title of 'Sultan.'
 - Became independent after the death of Muhammad Ghori and started his reign in 1206 CE.
 - Declared Lahore as his capital.
 - Known as 'Lakh Baksh' (giver of lakhs) for his generous donations.
 - Issued coins in gold, silver, billon, and copper, removing the name of the Abbasid caliph from them.
- **Ghiyasuddin Tughlaq (1320–1325 CE)**
 - Founder of the Tughlaq dynasty and assumed the title of Ghazi. (**Statement 2 is not correct**)
 - Was the first Sultan to promote irrigation projects.
 - Constructed a strong fort named Tughlaqabad near Delhi.
 - The rise of Ghiyasuddin Tughlaq is chronicled in Amir Khusrau's "Tughlaq Nama."
- **Ibrahim Lodi (1517–1526 CE)**
 - The last Sultan of the Lodi dynasty in the Delhi Sultanate.
 - Defeated in the First Battle of Panipat (1526) by Babur.
 - His defeat marked the end of the Lodi dynasty and the beginning of the Mughal Empire in India.

Q86. B

Understanding MIBOR (Mumbai Interbank Offered Rate):

- MIBOR is a benchmark interest rate used in India's money market. It serves as the reference rate for interbank borrowing for one day (overnight) unsecured loans in the call money market.
- MIBOR is specifically designed for the interbank call money market in India. It reflects the borrowing rate for overnight funds between banks without any collateral.
- MIBOR is not determined by the Reserve Bank of India (RBI).
- It is calculated and published by the Financial Benchmarks India Pvt. Ltd. (FBIL) based on polling select banks and financial institutions. **(Statement 2 is not correct)**
- FBIL replaced the earlier process managed by NSE in 2015.
- While MIBOR is updated daily, it is not the RBI's responsibility.
- MIBOR is extensively used in India's financial markets as a benchmark for various financial products, including:
 - Floating rate bonds.
 - Interest rate swaps.
 - Other interest rate derivatives.

Q87. A

- When government bonds are included in global indices, it attracts international investors, as many global funds and ETFs tracking these indices allocate investments accordingly.
- For example, the inclusion of Indian Government Bonds in indices like the JP Morgan Government Bond Index Emerging Markets (GBIEM) would enable global investors to access Indian bonds indirectly.
- Inclusion often leads to higher foreign investor participation, increasing demand for bonds.
- This can result in lower yields (borrowing costs) for the issuing government as bond prices rise due to demand.
- While open capital accounts and flexibility in currency convertibility are important, fully open capital accounts and free-floating exchange rates are not mandatory requirements.
- For instance, India does not have a fully open capital account or a free-floating exchange rate, yet it is considered for inclusion in global indices.
- Partial capital account convertibility with mechanisms like the Fully Accessible Route (FAR) for certain bonds is often sufficient for inclusion.
- Inclusion benefits: Increased foreign capital inflow, reduced government borrowing costs, and enhanced market depth.
- Eligibility criteria: Partial capital account convertibility and transparent, accessible trading mechanisms can suffice for inclusion. **(Statement 3 is not correct)**

Q88. B

MSME Definition (2020): Classification is based on two parameters—investment in plant and machinery/equipment and annual turnover.

- Unified Criteria: The same parameters apply to both manufacturing and service enterprises.
- As per the revised MSME definition (effective July 2020):
 - Micro enterprise: Investment up to ₹1 crore and turnover up to ₹5 crore.
 - Small enterprise: Investment up to ₹10 crore and turnover up to ₹50 crore.
 - Medium enterprise: Investment up to ₹50 crore and turnover up to ₹250 crore.
- A manufacturing enterprise with an investment of ₹5 crore and turnover of ₹30 crore falls under the Small Enterprise category. **(Statement 1 is not correct)**
- Investment in plant and machinery or equipment is calculated using the gross cost of acquisition, which includes the purchase price and other expenses (such as duties and taxes), excluding depreciation.
- This methodology ensures uniformity and aligns with government guidelines.

- Under the revised criteria of 2020, a single definition applies to both manufacturing and service enterprises, replacing the earlier distinction between the two.
- This unified approach facilitates ease of doing business and eliminates ambiguity in classification.
- Government Efforts: The revised criteria aim to promote transparency, encourage smallscale businesses, and improve access to credit and government schemes.

Q89. A

- Purpose of NAC: To standardize agricultural practices across India, covering everything from crop selection to postharvest storage.
 - The NAC is designed to standardize various agricultural practices across the entire cycle, such as crop selection, land preparation, irrigation, soil health management, harvesting, and storage.
 - It also aims to address areas currently unregulated by existing standards.
 - The NAC is forwardlooking, with provisions for modern agricultural methods like organic farming, natural farming, and the integration of InternetofThings (IoT) technology to promote efficiency and sustainability.
 - Agriculture is a state subject under Entry 14 of the State List in the Seventh Schedule of the Indian Constitution.
 - This creates potential conflicts between central and state jurisdictions, making harmonization a challenge for the successful implementation of NAC provisions.
 - Focus Areas: Includes natural farming, organic farming, and IoT technology.
 - Challenges: Diverse agroclimatic conditions, jurisdictional issues between states and the center, and resource constraints for smallholder farmers.
 - Constitutional Provisions: Agriculture as a state subject highlights the complexity of policy implementation in a federal structure. **(Statement 3 is not correct)**

Q90. A

- India's global share in merchandise exports increased from 1.70% in 2014 to 1.82% in 2023.
- India's share in global merchandise exports has shown consistent improvement, reflecting enhanced competitiveness and diversification in export markets.
- Refined petroleum, diamonds, and rice are among India's top export items.
- These products are key contributors to India's export basket, along with packaged medicaments and jewellery.
- India's trade deficit narrowed in 2023-24 to USD 78.12 billion from USD 121.62 billion in 2022-23, indicating improved export performance or controlled imports. **(Statement 2 is not correct)**
- The United States and Netherlands are among the top export destinations for India.
- Both countries are among India's leading export markets, along with UAE, China, and other key economies.
- India's Export Growth: Continuous improvement in global export ranking, with diversification into services and merchandise.

Q91. C

Employment and Skilling Initiatives in Budget 2024

- Introduction of Schemes:
 - The Union Finance Minister unveiled three schemes under the Prime Minister's package to promote employment linked incentives.
 - The schemes will rely on enrolment in the Employees' Provident Fund Organisation (EPFO) and will support both first time employees and their employers.

- Detailed Breakdown of the Five Schemes

1. One Month Wage Benefit (First Scheme):

- Newly employed workers in formal sectors will receive one month's wage as a benefit.
- Direct Benefit Transfer (DBT):
 - To be disbursed in three installments, up to ₹15,000, for firsttime employees registered in the EPFO.
- Eligibility:
 - Applicable to employees with a monthly salary of up to ₹1 lakh.

2. Incentives for Manufacturing Employment (Second Scheme):

- Designed to promote additional employment in the manufacturing sector.
 - Focus on FirstTime Employees:
 - EPFO contributions for firsttime employees will be covered for the first four years.
- Expected Benefit:
 - The scheme aims to benefit 30 lakh youth and their employers.

3. Support for All Sectors (Third Scheme):

- Covers additional employment across all sectors.
- Employer Reimbursement:
 - Employers will be reimbursed up to ₹3,000 per month for two years for each additional employee's EPFO contribution.

4. Youth Skilling Initiative (Fourth Scheme):

- Objective: To skill 20 lakh youth within five years.
- Upgrading ITIs:
 - 1,000 Industrial Training Institutes (ITIs) will be upgraded under a hubandspoke model, with a focus on improving outcomes.

5. Internship Opportunities (Fifth Scheme):

- Target:
 - One crore youth will receive 12month internships in 500 leading companies over the next five years.
- Government Support:
 - Interns will receive:
 - A monthly allowance of ₹5,000.
 - A onetime financial assistance of ₹6,000.

Q92. B

- **Net National Product (NNP)** is a key economic indicator that measures the total value of all goods and services produced by a country's citizens (both domestically and abroad) in a given year, after accounting for depreciation.
- Depreciation refers to the wear and tear on a country's physical capital (like machinery, buildings, and infrastructure).
- The formula for Net National Product (NNP) at Factor Cost is derived by adjusting the Net Domestic Product (NDP) for the following:
 - **Net Factor Income from Abroad (NFIA):** This is the income earned by domestic residents from abroad minus the income earned by foreign residents within the domestic economy.
 - **Indirect Taxes:** These are deducted because they increase market prices but do not represent factor incomes.
 - **Subsidies:** These are added because they reduce market prices without affecting factor incomes.

Q93. B

A hike in US Federal Reserve interest rates can have several implications for the Indian economy:

- **Capital Flows:** Higher interest rates in the US make American securities more attractive to investors, potentially diverting capital away from countries like India. This reduction in foreign investment can slow India's economic growth. **(Statement 1 is not correct)**
- **Currency Depreciation:** An increase in US rates often results in a depreciation of the Indian rupee, which affects the trade balance and widens the current account deficit. A weaker rupee can make imports, such as crude oil, more expensive, contributing to imported inflation in the Indian economy.
- **Borrowing Costs:** Domestic borrowing costs in India may rise as investors shift their preference to US securities over Indian ones. This can lead to reduced domestic investments and higher interest rates for businesses and consumers.
- **Stock Market:** Indian equity markets may experience downward pressure as higher US interest rates decrease the appetite for riskier assets like equities, leading to a potential drop in stock prices.
- **External Debt:** Since a significant portion of India's external debt is denominated in US dollars, a depreciation of the rupee due to a Fed rate hike increases the cost of servicing that debt, further adding to the country's debt burden.
- **Banking Sector:** On the other hand, Indian banks may benefit from rising interest rates as they can reprice loans faster than deposits, improving their net interest margin and profitability.

Q94. C

Gilt-edged Securities:

- Gilt-edged securities are high grade investment instruments issued by the Government of India or state governments.
- They are considered risk free as they are backed by the sovereign guarantee of the Indian government.
- Key Features of GiltEdged Securities in India
 - Issued by the Government of India or state governments.
 - Considered the safest investment because they are backed by the government's creditworthiness and have a negligible risk of default.
- Fixed Returns:
 - Gilt-edged securities are generally considered safe investments with low yields. They are a good option for investors seeking reliable returns with minimal risk.
- Generally, long term in nature, with maturities ranging from 1 year to 40 years.
- Types of Gilt-edged Securities
 - **Treasury Bills (T Bills):**
 - Short term securities with maturities of 91 days, 182 days, or 364 days.
 - Issued at a discount and redeemed at face value.
 - **Government Bonds:**
 - Long term instruments with fixed interest rates.
 - Includes instruments like Fixed Rate Bonds, Floating Rate Bonds, and Inflation Indexed Bonds.
 - **State Development Loans (SDLs):**
 - Issued by state governments to meet their financial needs.

Q95. C

Tangible and Intangible Assets:

- Tangible Assets

- Tangible assets are physical and measurable items used in a company's operations. These assets form the foundation of a business by enabling the production of goods and services.
- Key Features:
 - Tangible assets are visible and touchable.
 - They can be affected by naturally occurring events such as wear and tear or natural disasters.
 - Tangible assets include both current and fixed assets.
- Examples of Tangible Assets:
 - Land
 - Vehicles
 - Equipment
 - Machinery
 - Furniture
 - Inventory
 - Securities (e.g., stocks, bonds, and cash) (**Statement 2 is not correct**)
- Types of Tangible Assets:
 - Current Assets:
 - These are shortterm assets like cash, inventory, and marketable securities. They are used or converted into cash within a year.
 - Fixed Assets:
 - These are longterm assets such as property, plant, and equipment used in business operations for more than a year.
- Industries with Tangible Assets:
 - Manufacturing: Requires equipment, computers, and buildings for production, such as in the automobile or steel industries.
 - Technology: Produces devices like smartphones and computers, requiring tangible assets for manufacturing.
 - Oil & Gas: Owns capitalintensive tangible assets like oil rigs and drilling equipment.

Intangible Assets

- Intangible assets are nonphysical assets held over the long term. They often represent intellectual property and are challenging to value due to uncertainty regarding future benefits.
- Key Features:
 - Intangible assets contribute to a company's longterm value and can sometimes be more valuable than tangible assets.
 - They are initially recorded on the balance sheet and are essential for investors and creditors to assess a company's worth.
- Examples of Intangible Assets:
 - Patents: Grant exclusive rights to inventors.
 - Trademarks: Distinctive phrases or symbols that identify products and differentiate a brand.
 - Franchises: Licenses allowing franchisees to use a company's brand and sell its products.
 - Goodwill: Represents the premium paid during an acquisition above the target company's assets.
 - Copyrights: Protect intellectual property from unauthorized use or duplication.

Q96. D

- The Reserve Bank of India (RBI) primarily uses monetary policy tools to control inflation. In the context of reducing inflation, the most effective tools are:
 - **Increase in the repo rate:**
 - By increasing the repo rate, the RBI makes it more expensive for commercial banks to borrow money from it.
 - This, in turn, leads to higher interest rates for loans, discouraging borrowing and spending by individuals and businesses.
 - Reduced spending leads to lower demand for goods and services, which can help curb inflationary pressures.
 - **Moral suasion:**

- This involves the RBI persuading banks to follow certain lending and investment practices.
- In times of high inflation, the RBI might encourage banks to prioritize lending to productive sectors and discourage lending for speculative purposes.
- This can help control credit growth and inflationary expectations.
- While reducing the **Statutory Liquidity Ratio (SLR)** can increase the liquidity in the banking system, it might not be the most effective tool to control inflation, especially in a scenario where the primary concern is to reduce demand. **(Statement 2 is not correct)**

Q97. B

Alternative Investment Funds (AIFs):

- The Securities and Exchange Board of India (SEBI) has recently proposed stricter rules for alternative investment funds (AIFs) to limit their borrowing for investment purposes.
- **About Alternative Investment Funds (AIFs):**
 - AIFs are specialized investment instruments distinct from traditional investment options.
 - These funds are privately pooled investment vehicles established in India, collecting money from sophisticated Indian and foreign investors for investment purposes. **(Statement 1 is not correct)**
- AIFs pool funds from investors and channel them into specified investment categories outlined by SEBI for their benefit.
- They operate under the SEBI (Alternative Investment Funds) Regulations, 2012.
- AIFs can be set up as companies, Limited Liability Partnerships (LLPs), trusts, or other permitted structures.
- Primarily designed for high net worth individuals (HNIs) and institutional investors due to their substantial investment requirements.
- **Categories of AIFs:**
 - **Category I AIFs:**
 - These funds invest in sectors deemed socially or economically desirable by the government or regulators.
 - Startups
 - Earlystage ventures
 - Social ventures
 - Small and Medium Enterprises (SMEs)
 - Infrastructure projects
 - **Category II AIFs:**
 - These funds cover investments not included under Category I or III.
 - Borrowing is allowed only for operational needs as per SEBI regulations.
 - Types of funds under this category:
 - Real estate funds
 - Debt funds
 - Private equity funds
 - Distressed asset funds
 - **Category III AIFs:**
 - Employ diverse or complex trading strategies and may use leverage, including investments in listed or unlisted derivatives.
 - Examples: Hedge funds and Private Investment in Public Equity (PIPE) funds.
 - They can be either openended or closeended.

Q98. A

European Union's Carbon Border Adjustment Mechanism (CBAM)

- The **European Union (EU)** is set to implement its Carbon Border Adjustment Mechanism (CBAM) in a transitional phase.
- CBAM is a tariff imposed by the EU on carbon intensive products.
- To assign a fair cost to the carbon emissions produced during the manufacturing of carbon intensive goods imported into the EU.

- To motivate cleaner industrial production in countries outside the EU.
- CBAM ensures that imported goods have a carbon price equivalent to that of Produced goods. This helps protect the EU's climate objectives from being undermined by imports.
- CBAM will negatively affect India's exports of metals, including iron, steel, and aluminium, as these will face increased scrutiny.
- India's major exports to the EU, like iron ore and steel, could be significantly impacted.
- Carbon levies on these goods may range **between 19.8% to 52.7%, making exports less competitive.**

Q99. D

- Round tripping is a practice where funds are routed through foreign jurisdictions to disguise their origin and bring them back to the country of origin as foreign investment.
- This practice can have several negative consequences:
 - By artificially increasing foreign investment, round tripping can inflate a country's GDP figures, giving a false impression of economic growth.
 - Round tripping often involves tax evasion and avoidance, leading to significant revenue loss for the government.
 - It can distort the allocation of resources, as funds may be directed towards unproductive or nonpriority sectors.

Q100. C

- Although not one of the five Nobel Prizes established by Alfred Nobel's will in 1895, it is commonly referred to as the Nobel Prize in Economics, and is administered and referred to along with the Nobel Prizes by the Nobel Foundation. Winners of the Prize in Economic Sciences are chosen in a similar manner as and announced alongside the Nobel Prize recipients, and receive the Prize in Economic Sciences at the Nobel Prize Award Ceremony.
- The 2024 Nobel Prize in Economics has been awarded to Daron Acemoglu, Simon Johnson, and James A. Robinson for their research on the formation of institutions and their impact on economic prosperity. Their work sheds light on the modern-day relevance of institutional structures in explaining why some nations achieve wealth while others remain underdeveloped.
- The recipients will share the prize money of 11 million krona (USD 1.1 million) for their significant contributions to this field.
- **Key Areas of Focus in Their Research:**
 - The economists investigated how institutional frameworks shaped the economic trajectories of countries, particularly those colonised by Europeans.
 - Their findings reveal that in regions with high European mortality rates, settlers were less inclined to establish permanent settlements and instead introduced extractive institutions, many of which have endured over time.
 - The research underscores the critical role of institutional structures in determining economic outcomes, rather than attributing disparities to geographical or cultural factors.