



**FORTUNE  
IAS ACADEMY**

**PTS 2025  
COMPREHENSIVE  
TEST 02 - PAPER I KEY**

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**PTS 2025 - COMPREHENSIVE TEST 02 - PAPER 1**

1	<b>c</b>	21	<b>d</b>	41	<b>b</b>	61	<b>a</b>	81	<b>b</b>
2	<b>b</b>	22	<b>d</b>	42	<b>d</b>	62	<b>a</b>	82	<b>c</b>
3	<b>a</b>	23	<b>a</b>	43	<b>c</b>	63	<b>a</b>	83	<b>b</b>
4	<b>a</b>	24	<b>c</b>	44	<b>c</b>	64	<b>d</b>	84	<b>a</b>
5	<b>b</b>	25	<b>b</b>	45	<b>a</b>	65	<b>b</b>	85	<b>a</b>
6	<b>a</b>	26	<b>c</b>	46	<b>c</b>	66	<b>b</b>	86	<b>d</b>
7	<b>c</b>	27	<b>b</b>	47	<b>c</b>	67	<b>c</b>	87	<b>c</b>
8	<b>b</b>	28	<b>b</b>	48	<b>b</b>	68	<b>c</b>	88	<b>d</b>
9	<b>a</b>	29	<b>c</b>	49	<b>d</b>	69	<b>b</b>	89	<b>d</b>
10	<b>c</b>	30	<b>b</b>	50	<b>d</b>	70	<b>c</b>	90	<b>c</b>
11	<b>d</b>	31	<b>b</b>	51	<b>a</b>	71	<b>c</b>	91	<b>c</b>
12	<b>d</b>	32	<b>b</b>	52	<b>a</b>	72	<b>b</b>	92	<b>d</b>
13	<b>a</b>	33	<b>a</b>	53	<b>c</b>	73	<b>b</b>	93	<b>d</b>
14	<b>c</b>	34	<b>b</b>	54	<b>c</b>	74	<b>c</b>	94	<b>d</b>
15	<b>c</b>	35	<b>d</b>	55	<b>d</b>	75	<b>b</b>	95	<b>b</b>
16	<b>c</b>	36	<b>c</b>	56	<b>d</b>	76	<b>d</b>	96	<b>c</b>
17	<b>d</b>	37	<b>c</b>	57	<b>c</b>	77	<b>a</b>	97	<b>b</b>
18	<b>a</b>	38	<b>a</b>	58	<b>a</b>	78	<b>c</b>	98	<b>b</b>
19	<b>a</b>	39	<b>a</b>	59	<b>c</b>	79	<b>a</b>	99	<b>d</b>
20	<b>c</b>	40	<b>b</b>	60	<b>c</b>	80	<b>d</b>	100	<b>c</b>



1) **Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Election**

**Context:** The Election Commission of India (ECI) marked its 75th anniversary on January 25, 2025, a day that also observed National Voters' Day.

- **Statement I is CORRECT.** Since 2011, National Voters' Day has been observed annually on **January 25 to commemorate the foundation day of the Election Commission of India, which was established on January 25, 1950**—a day before India became a Republic. The day is dedicated to promoting voter awareness, encouraging active participation in the electoral process, and increasing the enrolment of new voters, particularly among the youth.
- **Statement II is INCORRECT.** **The provision of universal adult suffrage was introduced on 16 June, 1949 by the drafting committee chairman, not on 25<sup>th</sup> January, 1947 by the Cabinet Mission.** Moreover, this historical development is distinct and separate from the rationale behind the celebration of National Voters' Day.

**Source:** <https://www.deccanherald.com/elections/mizoram/election-fqs-what-is-universal-adult-franchise-2-2758242>

2) **Answer: (b)**

**Difficulty Level: Easy**

**Micro Topic: Election Commission**

- **Option (b) is CORRECT.** **The Election Commission of India** is vested with the authority to resolve disputes regarding splits and mergers of recognized political parties in India, as mandated by the Election Symbols (Reservation and Allotment) Order, 1968. This order grants the ECI the exclusive jurisdiction to decide which faction retains the original party's recognition and electoral symbol by evaluating the support within the party's organizational structure, including its office-bearers and legislative representatives (MPs and MLAs). If the evidence does not clearly favour one faction, the ECI may opt to freeze the symbol and require both groups to re-register under new identities. This process ensures electoral clarity and fairness, as evidenced by historical instances such as the 1969 Congress split.

**Source:** <https://www.thehindu.com/news/national/explainer-on-ecs-powers-to-decide-on-the-party-symbol-row/article16994557.ece>

3) **Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Parliament**

- **Statement 1 is CORRECT.** A Private Member is any Member of Parliament who is not a Minister, and a bill introduced by such a member is termed a Private Member's Bill. Both Houses of Parliament, as well as State Legislatures, allocate specific time slots for discussing these bills. Their primary significance lies in allowing legislators to raise issues that may not be addressed in government bills or to propose legal reforms. To introduce a Private Member's Bill, the concerned MP must submit a notice at least one month in advance, unless the Chairman permits a shorter notice period.



- **Statement 2 is INCORRECT. Since independence, 14 Private Members' Bills have been enacted into law, with 5 introduced in the Rajya Sabha.** Notable examples include the Proceedings of Legislature (Protection of Publication) Bill, 1956, the Salaries and Allowances of Members of Parliament (Amendment) Bill, 1964, the Indian Penal Code (Amendment) Bill, 1967, and the Supreme Court (Enlargement of Criminal Appellate Jurisdiction) Bill, 1970. **Since 1970, no Private Member's Bill has been passed by both Houses.**

**Source:** <https://www.thehindu.com/news/national/time-allotted-for-private-members-business-in-parliament-on-the-decline/article69043851.ece>

**4) Answer: (a)**

**Difficulty Level: Hard**

**Micro Topic: Parliament**

- **Option 1 is CORRECT.** Under the Constitution of India, the President is required to give his assent without discretion only to a Constitution Amendment Bill that has been passed by Parliament with the requisite special majority and, where necessary, ratified by the requisite number of State Legislatures.
- **Options 2 and 3 are INCORRECT.** In contrast, **for Money Bills**, despite the fact that they cannot be returned for reconsideration, the **President retains the discretion to either assent or withhold his assent.**
- Similarly, The Constitution (Article 4) itself declares that laws made for admission or establishment of new states (under Article 2) and formation of new states and alteration of areas, boundaries or names of existing states (under Articles 3) **are not to be considered as amendments of the Constitution under Article 368.** This means that such laws can be passed by a simple majority and by the ordinary legislative process. Consequently, **the President's assent to these bills is also discretionary.** Therefore, only the Constitution Amendment Bill (Option 1) compels the President to give his assent by constitutional mandate.

**Source:** Chapter 6, Union and its Territory, Indian Polity by M Laxmikanth(7th Edition), Page no: 50, 51

**5) Answer: (b)**

**Difficulty Level: Easy**

**Micro Topic: Scheduled and Tribal Areas**

- **Option (b) is CORRECT.** When a tribal area in the north-eastern states is brought under the Sixth Schedule, **it is administered as an autonomous district with considerable self-governing powers.** The Sixth Schedule provides for the formation of district councils in tribal areas of Assam, Meghalaya, Tripura, and Mizoram. **The governor is empowered to organize and re-organize the autonomous districts.** These councils, comprising both elected and nominated members, have authority over specified local matters such as land, forests, village administration, and social customs, though they require the governor's assent for law-making. Importantly, **while these districts enjoy significant autonomy, they remain within the executive jurisdiction of the state.**



**Source:** Chapter 42, Scheduled and Tribal Areas, Indian Polity by M Laxmikanth(7th Edition), Page no: 416, 417

6) **Answer: (a)**

**Difficulty Level: Easy**

**Micro Topic: Constitutional bodies**

- **Option (a) is CORRECT.** NITI Aayog, established in 2015, serves as the premier public policy think tank of the Government of India, focusing on catalyzing economic development and promoting cooperative federalism. **It was created through an executive resolution by the Union Cabinet, making it neither a constitutional body nor a statutory body.** In contrast, the Goods and Services Tax Council derives its authority from Article 279A of the Constitution, introduced by the 101st Constitutional Amendment Act of 2016. Similarly, the office of the Advocate General of the State is established under Article 165, and the Comptroller and Auditor General of India under Article 148. **Thus, options (b), (c), and (d) are directly mandated by specific constitutional provisions, whereas NITI Aayog is not, making it the only body among the options not established in accordance with a definite constitutional provision.**

**Source:** Chapter 47, Goods and Services Tax Council, Indian Polity by M Laxmikanth(7th Edition), Page no: 434, 435

7) **Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Fundamental Rights**

**Context:** Supreme Court will examine the issue of the 'right to be forgotten' concerning digital privacy.

- **Option (c) is CORRECT.** Right to be Forgotten is also known as 'right to erasure' and deals with individual rights to have control of the use of personal data by organizations. However, Right to be Forgotten (RTBF) is not an absolute right. In Justice K.S. Puttaswamy case (2017), **SC recognised RTBF as part of right to life under Article 21.** The Right to be forgotten gives the individuals the right to have their private information removed from the internet, websites or any other public platforms under special circumstances. This right is also called the 'Right to erasure'. The policy behind the rule of right to erasure is that whoever is using data has voluntary consent from the data owner and hence when the consent is withdrawn the owner has the right to have his data erased.

**Source:** <https://www.thehindu.com/news/national/right-to-be-forgotten-from-judicial-records-explained/article68459719.ece/amp/>

8) **Answer: (b)**

**Difficulty Level: Medium**

**Micro Topic: Fundamental Rights**

- **Statement I is CORRECT.** The jurisdiction of the Supreme Court in case of enforcement of fundamental rights is original but not exclusive. It is concurrent with the jurisdiction of the high court under Article 226. It vests original powers in the high



court to issue directions, orders and writs of all kinds for the enforcement of Fundamental Rights. It means when the Fundamental Rights of a citizen are violated, the aggrieved party has the option of moving either the high court or the Supreme Court directly. **But in Part III of the Constitution of India only the Supreme court has the power to issue Writs for the enforcement of Fundamental Rights.**

- The Supreme Court can issue writs only for the enforcement of the Fundamental Rights and not for other purposes. The high court, on the other hand, can issue writs not only for the enforcement of the fundamental rights but also for other legal matters as well.
- **Statement II is CORRECT.** Article 32 confers the right to remedies for the enforcement of the fundamental rights of an aggrieved citizen. In other words, the **right to get the Fundamental Rights protected is in itself a fundamental right.** This makes the fundamental rights real. That is why Dr. Ambedkar called Article 32 as the most important article of the Constitution-'an article without which this constitution would be a nullity. **It is the very soul of the Constitution and the very heart of it.** The Supreme Court has ruled that Article 32 is a basic feature of the Constitution. Hence, it cannot be abridged or taken away even by way of an amendment to the Constitution. Hence, Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I.

**Source:** Indian Polity by M Laxmikant 6th Edition Chapter 7, Page 7.20 7.21

9) **Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Non-Constitutional Bodies**

**Context:** Supreme court in *Kishorchandra Chhanganlal Rathod* case (2024) held that constitutional courts have the power to review orders of the Delimitation Commission if an order is manifestly arbitrary.

- **Statement 1 is INCORRECT.** The Delimitation Commission is a constitutional body, not an executive one. It is constituted by the President of India based on the provisions of the Constitution and a Delimitation Act passed by the Parliament. While the Delimitation Act provides the framework and procedures, the Commission itself derives its authority from the Constitution.
- **Note:** The Delimitation Commission is constituted after the enactment of a Delimitation Act by Parliament. While the Commission is established through this statute, and its structure, powers, and functioning are defined within it (not in the Constitution), the constitutional mandate for its formation stems from Articles 82 and 170. Therefore, although it is created by a law passed by Parliament, its foundation lies in the Constitution, making it constitutional in origin. However, in administrative parlance, it is commonly referred to as a statutory body due to its mode of establishment.
- **Statement 2 is INCORRECT.** The Supreme Court (SC) in *Kishorchandra Chhanganlal Rathod* case held that the Supreme Court has upheld its power to review Delimitation Commission orders if they are deemed clearly arbitrary or in violation of constitutional principles. **Although judicial review in delimitation cases is typically restricted, the Court can intervene when an order severely conflicts with constitutional values. The Court held that constitutional courts can check the validity of Delimitation Commission orders against the touchstone of the Constitution.** If a



Delimitation Commission order is found to be manifestly arbitrary and irreconcilable with constitutional values, the Court can grant appropriate remedies to rectify the situation.

- **Statement 3 is CORRECT.** These orders of the Delimitation Commission come into force on a date to be specified by the President of India on this behalf. **The copies of its orders are laid before the House of the People and the State Legislative Assembly concerned, but no modifications are permissible therein by them.**

Source: <https://www.eci.gov.in/delimitation>

10) Answer: (c)

Difficulty Level: Hard

Micro Topic: Parliament

- **Statement 1 is CORRECT.** A **Money Bill** can be introduced in the Lok Sabha only and only on the recommendation of the President, and it is considered a government bill that can only be introduced by a minister. Similarly, a **Financial Bill (I)** shares two key characteristics with a Money Bill: it must be introduced exclusively in the Lok Sabha, not in the Rajya Sabha, and its introduction also requires the prior recommendation of the President.
- **Statement 2 is CORRECT.** With regard to a **Money Bill, the Rajya Sabha's role is limited to making recommendations**; it does not have the authority to amend or reject the bill. The Rajya Sabha must return a Money Bill to the Lok Sabha within 14 days, regardless of whether it includes recommendations, and the Lok Sabha may choose to accept or reject these recommendations. In contrast, a **Financial Bill (I) is governed by the ordinary legislative procedure, allowing the Rajya Sabha to amend or reject it.** (The only exception is that any amendment not concerning the reduction or abolition of a tax cannot be moved in either House without the President's recommendation.)
- **Statement 3 is CORRECT.** In the event of a deadlock between the two Houses over a Financial Bill (I), the President is empowered to convene a joint sitting to resolve the dispute. Additionally, when any such bill is presented to the President, he may either give his assent, withhold his assent, or return the bill to the Houses for reconsideration. But, in case of a Money Bill, the possibility of disagreement between the Houses does not arise, and therefore, there is no provision for a joint sitting.

Source: Chapter 23, Parliament, Indian Polity by M Laxmikanth (7th Edition), Page no: 247, 248, 249

11) Answer: (d)

Difficulty Level: Easy

Micro Topic: Environmental conventions

- **Option (d) is CORRECT.** The **Montreux Record** is a register of wetlands under the **Ramsar Convention** that are facing ecological changes due to pollution, human interference, or other threats. It highlights wetlands requiring priority conservation efforts and international attention. India has two wetlands, **Keoladeo National Park** and **Loktak Lake**, listed in the Montreux Record due to ecological concerns. Inclusion on the record will help in **guiding the allocation of resources under financial mechanisms for wetland conservation.**



**Source:** <https://www.ramsar.org/sites/default/files/documents/library/info2007-06-e.pdf>

**12) Answer: (d)**

**Difficulty Level: Easy**

**Micro Topic: Wildlife Protection Act**

- **Statement I is INCORRECT.** Sacred groves are **not automatically considered community reserves under the Wildlife Protection Act.** The Supreme Court only recommended their recognition as community reserves, but this is not a binding legal requirement. If sacred groves were classified as community reserves, their management might shift to the Forest Department, which could affect traditional conservation practices. Therefore, sacred groves are primarily community-managed and not necessarily protected under the Wildlife Protection Act as community reserves.
- **Statement II is CORRECT.** Sacred groves are patches of forest land preserved by local communities due to religious and ecological beliefs. These groves serve as biodiversity hotspots, helping in soil conservation, aquifer recharge, and ecological balance. The conservation of sacred groves is based on cultural traditions rather than legal mandates, making them unique community-managed areas. Since these groves are maintained by local communities without direct government intervention, Statement-II accurately describes their role and conservation method.

**Source:** <https://www.thehindu.com/sci-tech/energy-and-environment/what-is-the-supreme-court-directive-on-sacred-groves-explained/article69183751.ece>

**13) Answer: (a)**

**Difficulty Level: Easy**

**Micro Topic: Fauna and flora**

- **Statement 1 is CORRECT.** When a group of species is physically isolated from the main population due to a barrier, they may experience different environmental conditions and selective pressures. Over time, genetic mutations and natural selection can lead to significant changes, resulting in reproductive isolation from the original group. This process, known as **allopatric speciation**, has been observed in many species, such as Darwin's finches on the Galápagos Islands. Thus, physical barriers can contribute to the formation of new species.
- **Statement 2 is INCORRECT.** Although physical isolation can create conditions favourable for speciation, it **does not always lead to the formation of new species.** Some isolated populations may not accumulate enough genetic differences to become reproductively isolated and may remain capable of interbreeding if reconnected. Additionally, genetic drift or limited variation might prevent significant evolutionary divergence.

**Source:** <https://www.bbc.co.uk/bitesize/guides/ztn9y4j/revision/4>

**14) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Fauna and flora**

- **Option 1 is CORRECT.** Seagrasses are **underwater flowering plants** that belong to the group of angiosperms. They produce flowers and reproduce through pollination,



often relying on water currents for pollen transport. Unlike seaweeds, which are algae, seagrasses have roots, stems, and leaves, making them true vascular plants.

- **Option 2 is CORRECT. Utricularia**, commonly known as **bladderwort**, is a genus of carnivorous plant that **produces flowers**. These plants have specialized bladder-like structures to trap small aquatic organisms, but they also reproduce using flowers, making them part of the angiosperm group. They are typically found in wetland or aquatic environments and are known for their unique pollination mechanisms.
- **Option 3 is CORRECT. Sandalwood** (Santalum) is a well-known **flowering plant** that belongs to the angiosperm family Santalaceae. It produces fragrant flowers and relies on pollinators for reproduction, making it a true flowering plant. Additionally, sandalwood is a partial root parasite, obtaining some nutrients from host plants while still performing photosynthesis.

**Source:** <https://www.britannica.com/plant/bladderwort>

### 15) Answer: (c)

**Difficulty Level: Medium**

**Micro Topic: Environmental conventions**

- **Option (c) is CORRECT. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – 1973:** CITES regulates the international trade of endangered species to prevent their exploitation. It classifies species into three appendices based on their threat level, restricting or banning trade accordingly. Countries that are party to CITES must implement national laws to control trade in listed species. It is a legally binding agreement, but its enforcement depends on national governments.
- **Montreal Protocol on Substances that Deplete the Ozone Layer – 1987:** The Montreal Protocol aims to phase out ozone-depleting substances such as chlorofluorocarbons (CFCs) and halons. It is one of the most successful environmental agreements, leading to the gradual recovery of the ozone layer. The treaty follows a stepwise reduction approach, with developing countries given additional time for compliance. Amendments, such as the **Kigali Amendment**, have expanded its scope to include hydrofluorocarbons (HFCs).
- **United Nations Convention to Combat Desertification (UNCCD) – 1994:** The UNCCD addresses desertification, land degradation, and drought, particularly in arid and semi-arid regions. It promotes sustainable land management practices and encourages global cooperation to restore degraded land. The convention emphasizes the role of local communities and indigenous knowledge in combating desertification. It is the only legally binding international treaty focused on land degradation issues.
- **Kyoto Protocol on Greenhouse Gas Emissions – 1997:** The Kyoto Protocol was the first international treaty to set legally binding emission reduction targets for developed nations. It introduced mechanisms like carbon trading and the Clean Development Mechanism (CDM) to help countries meet their targets. However, some major emitters, like the U.S., did not ratify the treaty, limiting its effectiveness. It was later **replaced by the Paris Agreement**, which includes all countries in emission reduction efforts.

**Source:** [https://unfccc.int/kyoto\\_protocol](https://unfccc.int/kyoto_protocol)



**16) Answer: (c) (Options 1, 2 and 3 are CORRECT.)**

**Difficulty Level: Hard**

**Micro Topic: Pollution**

• **Option 1 is CORRECT. National Ambient Air Quality Standards (NAAQS):**

The NAAQS sets permissible limits for various air pollutants to protect public health and the environment. It covers pollutants like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and others. The Central Pollution Control Board (CPCB) is responsible for formulating and implementing these standards. These standards serve as the basis for air quality monitoring and policy-making in India.

• **Option 2 is CORRECT. National Air Quality Monitoring Programme (NAMP):** NAMP is a nationwide air quality monitoring initiative managed by the CPCB. It operates through a network of stations that collect real-time air pollution data across urban and rural areas. The program helps in tracking long-term air pollution trends and formulating policies to mitigate air pollution. CPCB, along with State Pollution Control Boards (SPCBs), ensures its implementation.

• **Option 3 is CORRECT. National Air Quality Index (AQI):** AQI is a real-time air quality reporting system launched by the CPCB. It simplifies complex air pollution data into a single index for easy public understanding. The index categorizes air quality into six levels, ranging from 'Good' to 'Severe.' CPCB manages and updates AQI data for major cities and towns.

• **Option 4 is INCORRECT. System of Air Quality and Weather Forecasting and Research (SAFAR):** SAFAR is an advanced air quality forecasting system developed indigenously by the Indian Institute of Tropical Meteorology (IITM), Pune, and operationalized by India Meteorological Department (IMD). It provides location-specific air quality forecasts and weather updates for select Indian cities. **SAFAR is not implemented by CPCB but functions under the Ministry of Earth Sciences (MoES).** Its purpose is to help people plan their outdoor activities based on predicted air pollution levels.

**Source:** [https://cpcb.nic.in/upload/NAAQS\\_2019.pdf](https://cpcb.nic.in/upload/NAAQS_2019.pdf)

**17) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Environmental conventions**

**Context:** COP 16 of the Convention on Biological Diversity (CBD).

• **Option (d) is CORRECT.** In a major development under the **Convention on Biological Diversity (CBD)**, the **Cali Fund** for the Fair and Equitable Sharing of Benefits from the use of Digital Sequence Information on Genetic Resources (DSI) was introduced. The Cali Fund which will receive contributions from private sector entities making commercial use of DSI, was launched in Rome on the margins of the second day of the resumed session of COP 16 of the CBD at the Headquarters of the Food and Agriculture Organization of the United Nations (FAO).

• The Cali Fund will mobilize new streams of funding for biodiversity action worldwide, in support of the three objectives of the CBD: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the use of genetic resources.



- Recognizing their role and contributions as custodians of biodiversity, 50 per cent of the resources of the Cali Fund will be allocated to the self-identified needs of indigenous peoples and local communities, including women and youth.

**Source:** <https://www.downtoearth.org.in/wildlife-biodiversity/cali-fund-launched-at-cbd-cop16-in-rome-to-boost-biodiversity-finance#:~:text=A%20new%20international%20fund%20has,collect%20money%20from%20private%20companies.>

**18) Answer: (a) (Only Pair 1 is CORRECTLY matched.)**

**Difficulty Level: Hard**

**Micro Topic: Fauna and flora**

- **Pair 1 is CORRECTLY matched.** **Sal** (*Shorea robusta*) is a dominant tree species in **moist deciduous forests**, found in regions like central and eastern India (Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha, and the Himalayan foothills).
- **Pair 2 is INCORRECTLY matched.** **Tendu** (*Diospyros melanoxylon*) is not an evergreen tree; it is commonly found in **dry deciduous forests** and is known for its leaves, which are used to make bidis (local cigarettes).
- **Pair 3 is INCORRECTLY matched.** **Aini** (*Artocarpus hirsutus*) is not a tropical thorn species; it is mainly found in **tropical evergreen and semi-evergreen forests**, especially in the Western Ghats.
- Species found in Tropical Evergreen forests include rosewood, mahogany, aini, ebony, etc.
- Main species in tropical semi-evergreen forests are white cedar, hollock and kail.
- Teak, sal, shisham, hurra, mahua, amla, semul, kusum, and sandalwood, etc. are the main species of moist deciduous forests.
- Tendu, palas, amaltas, bel, khair, axlewood, etc. are the common trees of dry deciduous forests.
- Chinar, Deodar and Walnut are wet temperate forest trees (Montane forests in India).

**Sources:** India: Physical Environment (NCERT XI), Chapter 5

**19) Answer: (a)**

**Difficulty Level: Hard**

**Micro Topic: Alternative energy**

**Context:** Researchers from the Centre for Nano and Soft Matter Sciences (CeNS), an autonomous institution under the Department of Science and Technology (DST) in Bengaluru, have developed a photo-assisted self-chargeable energy storage device.

- **Statement I is CORRECT.** Researchers have unveiled a novel air-chargeable battery for a sustainable power solution. This technology traps the oxygen from the environment to drive the charging process for energy storage and is a step towards a carbon-neutral future. Recent research has explored the “air-assisted self-charging” concept of aqueous ZIBs (zinc-ion batteries), aiming to utilize oxygen from the air to replenish the charge of the battery.
- **Statement II is CORRECT.** Oxygen plays a key role in the working of these batteries by triggering an **oxygen reduction reaction** (ORR), which generates and stores



electrical energy. At the core of this innovation is the use of **vanadium oxide (VO<sub>2</sub>)**. The vanadium oxide (VO<sub>2</sub>) layer functions as an air cathode electrode, allowing the battery to harness atmospheric oxygen as a means of replenishing its charge. **Hence Statements I and II are correct and Statement II is the correct explanation for Statement I.**

**Source:** <https://dst.gov.in/redefining-energy-storage-photo-assisted-self-charging-energy-storage-devices>

**20) Answer: (c)**

**Difficulty Level: Easy**

**Micro Topic: Electric vehicles**

**Context:** Rising demand for electric cars in India.

- **Statement 1 is CORRECT.** Lithium-ion batteries are currently used in most portable consumer electronics such as cell phones and laptops because of their high energy per unit mass and volume relative to other electrical energy storage systems. They also have a high power-to-weight ratio, high energy efficiency, good high-temperature performance, long life, and low self-discharge. Most components of lithium-ion batteries can be recycled, but the cost of material recovery remains a challenge for the industry. Most of today's all-electric vehicles and PHEVs (plug-in hybrid electric vehicles) use lithium-ion batteries, though the exact chemistry often varies from that of consumer electronics batteries. **High energy densities and long lifespans** have made Li-ion batteries the market leader in portable electronic devices and electrified transportation.
- **Statement 2 is CORRECT.** Regenerative braking systems (RBSs) are a type of **kinetic energy recovery** system that transfers the kinetic energy of an object in motion into potential or stored energy to slow the vehicle down, and as a result increases fuel efficiency.

**Source:** <https://afdc.energy.gov/vehicles/electric-batteries>

**21) Answer: (d)**

**Difficulty Level: Medium**

**Micro Topic: Space science**

- **Option (d) is CORRECT.** The **Torino Impact Hazard Scale** is used to assess the **risk posed by near-Earth objects (NEOs)**, such as asteroids and comets, based on their probability of collision and potential consequences. It ranges from **0 (no risk) to 10** (certain impact with global catastrophe). The scale helps scientists communicate potential threats to the public and policymakers in a clear manner.
- On 27 December last year, astronomers using the ATLAS survey telescope in Chile discovered a small asteroid moving away from Earth. Follow up observations have revealed that the asteroid, 2024 YR4, is on a path that might lead to a collision with our planet on December 22 2032.

**Source:** <https://www.theguardian.com/science/2025/jan/30/asteroid-spotted-chance-colliding-with-earth-2032>



**22) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Basic science**

- **Statement 1 is CORRECT.** A solar eclipse can only occur on a new moon day when the Moon is positioned between the Sun and Earth. This alignment allows the Moon to block sunlight, casting a shadow on Earth. Other lunar phases, like full moon or crescent, do not create this alignment.
- **Statement 2 is CORRECT.** A total solar eclipse happens when the Moon completely covers the Sun, revealing the outermost layer called the corona. The corona is usually hidden by the Sun's brightness and becomes visible only during totality. No other type of eclipse allows direct observation of the corona without special instruments.
- **Statement 3 is CORRECT.** An annular solar eclipse occurs when the Moon is at its farthest point (apogee) from Earth and appears smaller than the Sun. Since it doesn't fully cover the Sun, a bright ring (annulus) remains visible around the Moon. This happens because the Moon's orbit is elliptical, causing its apparent size to vary.

**Source:** <https://science.nasa.gov/eclipses/types/>

**23) Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Genetic engineering**

- **Statement 1 is CORRECT.** A plant species can be made pest-resistant by introducing genes from organisms with insecticidal properties, such as the **Bacillus thuringiensis (Bt) gene in Bt cotton**. This genetic modification enables the plant to produce proteins toxic to specific pests. Such techniques help reduce pesticide use and increase crop yield.
- **Statement 2 is INCORRECT.** India has approved the cultivation of genetically modified **Bt cotton**, which produces insecticidal proteins harmful to specific pests like the bollworm. Although GM food crops like Bt brinjal and GM mustard have faced regulatory restrictions, pest-resistant GM crops exist in India. The approval process considers environmental and ecological impacts rather than an outright ban on insect-affecting GM crops.

**Source:** <https://indianexpress.com/article/explained/explained-economics/cotton-crisis-punjab-bt-cotton-regulatory-bollgard-9866415/>

**24) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Artificial intelligence**

- **Option (c) is CORRECT.** An **AI sandbox** provides a **controlled environment** for users to experiment with AI models without affecting real-world systems. It allows developers to test, modify, and refine AI algorithms using available datasets and tools. This feature helps in assessing AI models' performance, debugging errors, and ensuring security before deployment. AI sandboxes are commonly used for research, innovation, and safe experimentation without unintended consequences.

**Source:** <https://www.gov.uk/ai-assurance-techniques/nayaones-ai-sandbox>



25) Answer: (b) (Statements 2 and 3 are CORRECT.)

Difficulty Level: Medium

Micro Topic: Nuclear technology

- **Statement 1 is INCORRECT.** Nuclear fission produces long-lived radioactive waste due to the heavy nuclei splitting into radioactive by-products. However, nuclear **fusion primarily produces lighter, stable elements** like helium and **does not generate long-lived nuclear waste.**
- **Statement 2 is CORRECT.** In both nuclear fission and fusion, the total mass of the final products is less than the mass of the reactants. This lost mass is converted into energy according to Einstein's equation  $E=mc^2$ .
- **Statement 3 is CORRECT.** Tritium is a hydrogen isotope used as a fuel in nuclear fusion, especially in deuterium-tritium (D-T) fusion reactions. Lithium can be used to produce tritium when bombarded with neutrons in a fusion reactor.

Source: <https://www.iaea.org/topics/energy/fusion/faqs>

26) Answer: (c)

Difficulty Level: Hard

Micro Topic: Information Technology

- **Pair 1 is CORRECTLY matched.** Deep Seek AI is a cost-effective artificial intelligence model developed in China, recognized for its advanced capabilities in generating high-quality content, including text and images, based on the data it is trained on.
- **Pair 2 is CORRECTLY matched.** Google's Willow is a state-of-the-art quantum computing chip that utilizes qubits to process data, representing a significant advancement in quantum error correction and computational capabilities.
- **Pair 3 is CORRECTLY matched.** Param Shivay is a high-performance supercomputing system developed in India, capable of processing data in the petaflops range, thereby enhancing computational research and development capabilities.

Source: <https://research.ibm.com/blog/what-is-generative-AI>

27) Answer: (b)

Difficulty Level: Hard

Micro Topic: Terms in news

- **Option (b) is CORRECT.** **Black plastic** is often **made from recycled electronic waste**, such as discarded televisions and computer monitors. This recycling process can introduce **toxic substances** like brominated flame retardants, lead, and cadmium into the plastic. Due to these hazardous chemicals, black plastic items, especially those used in kitchenware, may pose health risks when they come into contact with food. Unlike other plastics, black plastic is difficult to recycle further because sorting systems struggle to detect its colour. Therefore, concerns about its safety and environmental impact have led to increased scrutiny and regulatory discussions.

Source: <https://indianexpress.com/article/explained/explained-sci-tech/black-plastic-9854309/>



28) Answer: (b) (Statements 1 and 3 are CORRECT.)

Difficulty Level: Hard

Micro Topic: Space technology

- **Statement 1 is CORRECT.** The space agencies of **China (CNSA), India (ISRO), and Russia (Roscosmos)** have successfully landed vehicles on the Moon.
  - **China:** Chang'e missions (Chang'e 3, 4, and 5)
  - **India:** Chandrayaan-3 successfully landed in 2023
  - **Russia:** Soviet Union's Luna missions
- **Statement 2 is INCORRECT.** Only **China and Russia** have successfully landed vehicles on Mars, **India has not.**
  - **China:** Tianwen-1 mission successfully landed the Zhurong rover on Mars
  - **Russia:** Soviet Union's Mars 3 mission made a soft landing in 1971
  - **India:** ISRO's Mars Orbiter Mission (Mangalyaan) orbited **Mars but did not land.**
- **Statement 3 is CORRECT. China:** China has launched solar observatories and has plans for further solar exploration.
  - **India:** ISRO has successfully launched Aditya-L1, India's first dedicated scientific mission to study the Sun.
  - **Russia:** The Soviet Union launched probes that studied the solar wind and interplanetary medium. Russia continues to participate in solar research through international collaborations and its own missions.

Source: <https://www.thehindu.com/sci-tech/science/chinese-spacecraft-successfully-lands-on-moons-far-side-in-growing-space-rivalry-with-us/article68242102.ece>

29) Answer: (c)

Difficulty Level: Medium

Micro Topic: Basic science

- **Statement I is CORRECT.** Radio waves are not used to locate submarines underwater because they do not effectively penetrate water. Instead, submarines are typically detected using **sonar (sound waves)**, which travel efficiently through water.
- **Statement II is CORRECT and explains Statement-I. Radio waves have very poor penetration in water**, especially at higher frequencies. This is why **submarine communication uses very low frequency (VLF) or extremely low frequency (ELF) waves**, which have limited range and bandwidth.
- **Statement III is INCORRECT. Radio waves can pass through electrical conductors**, but their interaction varies based on the material. Conductors may reflect or absorb radio waves, but they do not always completely block them. Depending on the frequency and the conductor's properties, radio waves can be transmitted through or around them.

Source: <https://www.britannica.com/science/electromagnetic-radiation/Radio-waves>

30) Answer: (b)

Difficulty Level: Hard

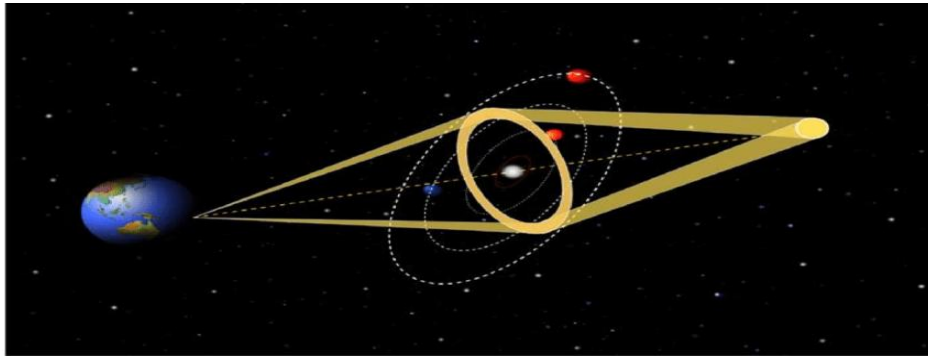
Micro Topic: Terms in news

Context: Scientists discover 'Einstein ring' around nearby galaxy.

- **Option (b) is CORRECT.** Scientists recently discovered an 'Einstein Ring' around a nearby galaxy.



- An **Einstein ring is a ring of light around a form of dark matter, galaxy or cluster of galaxies**. It is essentially an example of **gravitational lensing**. Gravitational lensing is a phenomenon which occurs when a massive celestial body — such as a galaxy or cluster of galaxies — creates a **gravitational field which distorts light from distant galaxies that are behind it but in the same line of sight**. The body causing the light to curve is called a gravitational lens.
- In the case of the recently discovered Einstein ring, NGC 6505 was the gravitational lens. The nearer galaxy distorted and amplified the light coming from a distant unnamed galaxy, located 4.42 billion light-years away.



**Source:** <https://www.nasa.gov/missions/euclid/euclid-discovers-einstein-ring-in-our-cosmic-backyard/>

**31) Answer: (b)**

**Difficulty Level: Medium**

**Micro Topic: Biogeography**

- **Option (b) is CORRECT.** The **Tundra biome** is characterized by **cold and harsh conditions**, often under **gray, overcast skies**. The **Sun barely rises above the horizon** in winter, leading to **short daylight hours**. Strong winds sweep across the barren terrain, while precipitation is sparse, mostly falling as light snow. The permafrost (Permafrost is ground that has been frozen for at least two years. It is made up of soil, sand, sediment, and rock that are bound together by ice-covered ground) supports only low-lying plants like mosses and lichens. Life in this extreme environment is a constant battle against the elements, making survival a challenge for both plants and animals.
- **Option (a) is INCORRECT.** The **Taiga**, also known as the **boreal forest**, is a vast **circumpolar biome** dominated by **cone-bearing evergreen trees**. It covers 17% of Earth's land surface, primarily in the Northern Hemisphere, including Russia and Siberia, where its name means "land of the little sticks" in Russian. Characterized by long winters and moderate to high precipitation, the taiga is one of the largest and most important forested ecosystems on Earth.
- **Option (c) is INCORRECT.** The **steppe** is a vast, **treeless grassland** with **low vegetation diversity**, receiving about 25–30 cm (10–12 inches) of annual rainfall. The term "steppe" comes from the Russian word for "flat grassy plain". Steppes have hot summers and cold winters, with low humidity due to their inland location, often isolated by mountains.
- **Option (d) is INCORRECT:** The **British Climate**, or **Cool Temperate Western Margin Climate**, is shaped by the Westerlies and temperate cyclones, making it highly



unpredictable. It has cool, rainy winters and warm, rainy summers, with year-round rainfall peaking in winter. The North Atlantic Drift moderates winters, though polar air can bring cold spells. The climate features four seasons, with cloudy winters, dry springs, warm summers, and windy autumns. Deciduous forests, including oak and birch, dominate, while conifers thrive at higher altitudes.

Source: <https://ncert.nic.in/textbook/pdf/iess105.pdf>

**32) Answer: (b)**

**Difficulty Level: Medium**

**Micro Topic: Climatology**

**Context:** The severe cyclonic storm Remal made landfall between Sagar Island in West Bengal and Khepupara recently.

- **Statement I is CORRECT.** Cyclones do not form at the equator. This is because the **Coriolis force**, which is necessary for the rotation and formation of cyclones, **is zero at the equator**. Cyclones form between **5° to 20° latitude** because the Coriolis effect is strong enough there to initiate their rotation. The Coriolis effect becomes stronger as you move away from the equator.
- **Statement II is CORRECT.** The **Coriolis force** arises due to Earth's rotation and acts perpendicular to the motion of air. **Pressure Gradient Force (PGF) pushes air from high pressure to low pressure. Coriolis Force deflects this movement perpendicular to its direction. When these two forces balance**, the wind does not move directly across isobars (lines of equal pressure) but instead **flows parallel to them**—this is called **Geostrophic Balance**.
- Cyclone formation depends on the Coriolis Force being strong enough to induce rotation, which is absent at the equator, preventing cyclogenesis. Jet streams flowing parallel to isobars is a separate phenomenon related to upper-level atmospheric winds and not linked to cyclone formation. Since both statements are factually correct but not directly related in a cause-effect manner, **Statement-II does not explain Statement-I**.

Source: <https://ncert.nic.in/textbook/pdf/kegy209.pdf>

**33) Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Geomorphology**

- **Statement 1 is CORRECT.** A **glacial valley** is a valley that has been carved by the erosive action of a glacier. These valleys are typically characterized by their **U-shape**, in contrast to the V-shape of valleys formed by rivers. Glacial valleys are U-shaped due to glacial erosion. It has broad floors and relatively smooth, steep sides. These valleys may contain debris or moraines, and sometimes, lakes.
- **Statement 2 is CORRECT.** **Hanging valleys** form when tributary glaciers do not erode as deeply as the main glacier. After the ice has melted, a tributary valley hangs above the main valley so that its stream plunges down as a waterfall. After deglaciation, meltwater from hanging valleys often forms waterfalls when joining the main valley. Example - **Har-KiDoon Valley, Uttarakhand**.



- **Statement 3 is INCORRECT. Meltwater from hanging valleys often forms waterfalls** when it flows down into the main valley. These waterfalls are a prominent feature of hanging valleys in post-glacial landscapes. A classic example can be seen in areas like **Yosemite National Park**.

**Source:** <https://ncert.nic.in/textbook/pdf/kegy206.pdf> Page no. 55

**34) Answer: (b) (Pairs 2 and 3 are CORRECTLY matched.)**

**Difficulty Level: Hard**

**Micro Topic: Mapping**

**Context:** The Bohai Gulf has been in the news for oil and gas discoveries, and for being added to UNESCO's World Heritage List.

- **Pair 1 is INCORRECTLY matched.** Major rivers such as the **Yellow River** (Huang He) and the **Yangtze River** flow into the **Yellow Sea**, in **Bohai gulf**. It is also known as the **Bohai Sea or Bo Hai**. The Bohai Gulf is the innermost part of the Yellow Sea, situated on the northeastern coast of China.
- **Pair 2 is CORRECTLY matched.** The **Mississippi River** flows into the **Gulf of Mexico**. The Mississippi and the **Rio Grande** are the major rivers draining into the gulf. It is a partially landlocked body of water on the southeastern periphery of the North American continent.
- **Pair 3 is CORRECTLY matched.** **Shatt al-Arab River** flows into the **Persian Gulf**. The Shatt al-Arab is **formed by the confluence of the Tigris and Euphrates Rivers in southern Iraq**. It serves as a natural border between Iraq and Iran before emptying into the Persian Gulf. It is strategically important and has been a source of disputes between Iraq and Iran.
- **Pair 4 is INCORRECTLY matched.** The **Mekong River** flows into the **Gulf of Thailand**, which is part of the **South China Sea**. The Mekong River, one of the longest rivers in Asia, originates in the Tibetan Plateau and flows through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam before emptying into the South China Sea.

**Source:** <https://www.thehindu.com/news/international/chinas-intercontinental-missile-sends-waves-across-indo-pacific/article68689116.ece>

**35) Answer: (d)**

**Difficulty Level: Easy**

**Micro Topic: Earth**

- **Option 1 is CORRECT. Eccentricity** is a measure of how much an orbit deviates from a perfect circle. It is a key factor in determining the shape of an orbit, and can affect the climate and habitability of planets. An eccentricity of **0 indicates a perfectly circular orbit**, while an eccentricity **between 0 and 1 indicates an elliptical orbit**. Earth's orbit around the Sun changes from nearly circular to more elliptical in a **100,000-year cycle**.
- **Option 2 is CORRECT. Obliquity** is the angle between the Earth's axis of rotation and its orbital plane. It's also known as **axial tilt**. The tilt of Earth's axis **varies between 22.1° and 24.5° over a 41,000-year cycle**. This affects the intensity of seasons, with



greater tilt leading to more extreme seasonal variations i.e., when the angle of obliquity increases, summers are warmer and winters are colder.

- **Option 3 is CORRECT. Precession** is the **slow change in the direction of Earth's rotational axis**. It is similar to the **wobbling of a spinning top**. Planet Earth is affected by two different types of precession, **axial precession** (caused by the gravitational pull of the Moon and the Sun) and **apsidal precession** (caused by the gravitational pull of Jupiter and Saturn). Over 26,000 years, the direction of Earth's tilt changes, shifting the timing of seasonal variations.
- **Additional Info: Milankovitch cycles** are the **natural variations in Earth's orbit around the sun that cause changes in the planet's climate**. These cycles are caused by changes in the Earth's **eccentricity, axial tilt, and precession**.

Source: <https://ncert.nic.in/textbook/pdf/kegy211.pdf> Page 95

36) Answer: (c)

Difficulty Level: Medium

Micro Topic: Water bodies

Context: The Hindu news report: Impact of Arctic ice on Indian monsoons.

- **Option (c) is CORRECT**. New research reveals that **less sea ice in the central Arctic leads to lower rain in western and peninsular India** but more rain in central and northern India.



- **The Kara Sea is located in the Arctic bordering Russia**. The Kara Sea is a marginal sea of the Arctic Ocean, **located to the north of Siberia** and bounded by the Novaya Zemlya archipelago to the west and the Severnaya Zemlya archipelago to the east. It is **known for its cold-water currents** and harsh ice-covered conditions for most of the year.



Source: <https://www.thehindu.com/sci-tech/science/what-role-does-arctic-sea-ice-play-in-indian-monsoon/article68600899.ece>

37) Answer: (c)

Difficulty Level: Hard

Micro Topic: Volcanoes

Context: Thermal anomalies over Fentale crater.

- **Statement 1 is INCORRECT.** Stratovolcanoes are **not primarily composed of basaltic lava flows**. They are made up of alternating layers of ash, lava, and other volcanic debris, which leads to their steep, cone-shaped structure. Basaltic lava flows create shield volcanoes, which have broad, gentle slopes.
- **Statement 2 is INCORRECT.** Stratovolcano **eruptions are typically explosive, not effusive**. They are characterized by high-viscosity lava and significant pyroclastic material (ash, rock fragments).
- **Statement 3 is CORRECT.** Mount Fentale is an active stratovolcano located in Ethiopia. Recently, substantial methane emission from Mount Fentale, was detected creating panic about a potential eruption.

Source: <https://www.britannica.com/science/stratovolcano>

38) Answer: (a)

Difficulty Level: Hard

Micro Topic: Current affairs

Context: Srisailem Left Bank Canal (SLBC) tunnel collapse

- **Option (a) is CORRECT.** Recently tunnel sections of the SLBC collapsed trapping eight workers inside.
- The Alimineti Madhava Reddy Srisailem Left Bank Canal Project which started in 1983, aims to divert water from the Krishna River to the drought prone areas of Nalgonda District in Telangana for 3 lakh acre Irrigated Dry (ID), besides supplying drinking water to the fluoride affected villages enroute, **utilizing 30 Thousand million cubic feet of Krishna Water**. This scheme has two alternatives. 1. Gravity scheme from foreshore of Srisailem reservoir, through two tunnels. 2. Lift scheme from foreshore of Nagarjuna Sagar Reservoir.

Source: <https://www.indiatoday.in/india/telangana/story/telangana-slbc-tunnel-collapse-expert-warnings-ignored-ambitious-irrigation-project-history-2691586-2025-03-10>

39) Answer: (a)

Difficulty Level: Medium

Micro Topic: Earthquake

- **Statement 1 is CORRECT.** Almost the whole of the peninsula, with the exception of western coast and parts of the eastern coast, lie in the low or very low damage risk zone.
- **Statement 2 is CORRECT.** Almost the whole of North-eastern India, including Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Manipur and Tripura lie in the very high damage risk zone.



- **Statement 3 is INCORRECT.** While some areas in **Central India and North -western India** lie in the moderate risk zone, **most of the areas are either low-risk or very-low risk areas.** The western part of Gujarat and Rajasthan alone lie in the high or very high damage risk zone.

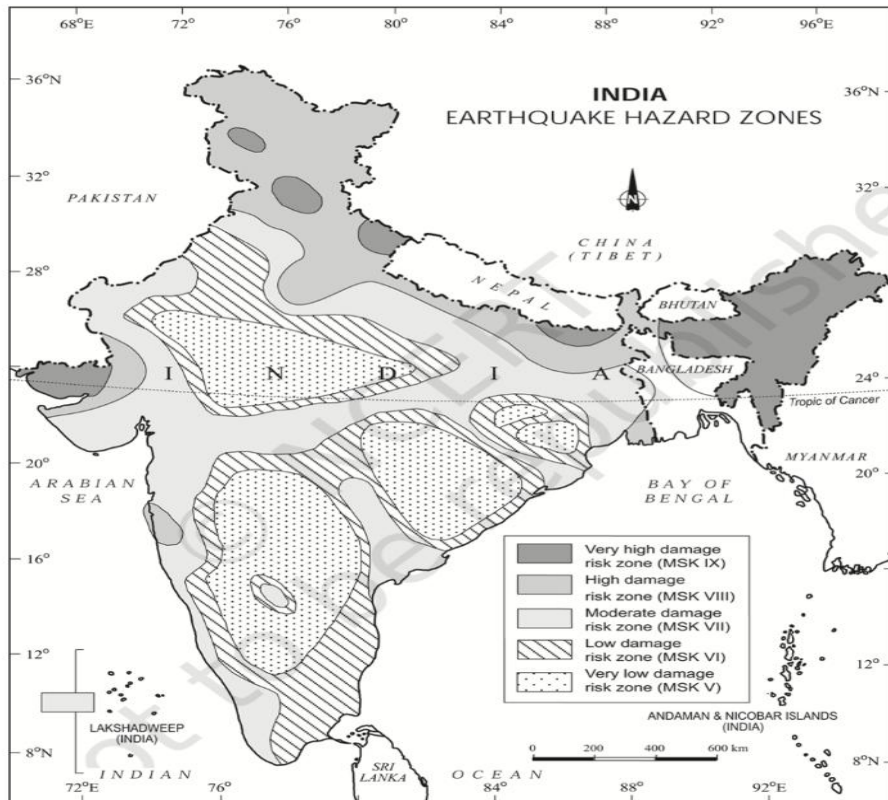


Figure 7.2 : India: Earthquake Hazard Zones

Source: India: Physical Environment (NCERT XI), Chapter 8

40) Answer: (b)

Difficulty Level: Hard

Micro Topic: Geology of India

- **Option (b) is CORRECT.** The **tertiary** period is the most significant period in India's geological history because the **Himalayas were born and India's present form came into being in this period.**
- **Option (a) is INCORRECT.** India's major (high carbon) **coal reserves**, particularly the Gondwana coal, were formed during the **Permian period** of the Paleozoic era, long before the Tertiary period. The Tertiary coal is young, generally has low carbon and high percentage of moisture and Sulphur.
- **Option (c) is INCORRECT.** The **Deccan Traps**, vast volcanic basalt formations, were primarily formed at the **end of the Cretaceous period**, just before the onset of the Tertiary.
- **Option (d) is INCORRECT.** The Tertiary period predates the **appearance of humans**, which occurred much later in the **Quaternary period.**

Source: India – A Comprehensive Geography by D R Khullar, 2nd Edition, Chapters 2,25



41) Answer: (b)

Difficulty Level: Hard

Micro Topic: Map of India

- **Option (b) is CORRECT. Only Jaipur lies to the North of the Tropic of Cancer. All other cities lie to the South of the Tropic of Cancer.** So a person travelling in the said route only has to cross the Tropic of Cancer **twice** - once while travelling to Jaipur from Gandhinagar and second when travelling from Jaipur to Bhopal. From Bhopal to Raipur to Ranchi and then to Kolkata, the person does not have to cross the Tropic of Cancer.



Source: India: Physical Environment (NCERT XI), Chapter 1

42) Answer: (d)

Difficulty Level: Hard

Micro Topic: Soils

- **Statement 1 is INCORRECT.** Alluvial soils in the Ganga-Brahmaputra plains are classified into **Bhangar (old alluvium) and Khadar (new alluvium)**. Khadar is the new alluvium and is deposited by floods annually, which enriches the soil by depositing fine silts. Bhangar represents a system of older alluvium, deposited away from the flood plains. **Both the Khadar and Bhangar soils contain calcareous concretions (Kankars).** While Kankar is a characteristic feature of Bhangar, Khadar is not



completely devoid of Kankar. **However, Khadar generally lacks significant Kankar because it is younger, has high moisture content, and is frequently renewed.**

- **Statement 2 is INCORRECT.** The alluvial soils vary in nature from sandy loam to clay. These soils are more loamy and clayey in the lower and middle Ganga plain and the Brahmaputra valley. The **sand content decreases from the west to east.**
- The colour of the alluvial soils varies from the light grey to ash grey. Its shades depend on the depth of the deposition, the texture of the materials, and the time taken for attaining maturity. Alluvial soils are intensively cultivated.

**Source:** India: Physical Environment (NCERT XI), Chapter 6

**43) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Places in news**

- **Tuvalu** is a small island country located in the **west-central Pacific**, roughly halfway **between Hawaii and Australia**. Its capital is **Funafuti**. The country consists of **nine coral islands**, including three main islands Nanumanga, Niutao, and Niulakita and **six coral atolls**, such as Funafuti, Nanumea, and Nui, along with over **100 small islets**. Formerly known as the **Ellice Islands**, Tuvalu is bordered by Kiribati to the north, and Fiji to the south. The Tuvaluan people are **Polynesian**, and the official language, **Tuvaluan**, is closely related to **Samoan**
- **Option (a) is CORRECT.** It is a Polynesian country composed of 9 small coral islands. It is situated to the east-northeast of **Santa Cruz Islands**, to the northeast of Vanuatu, to the southeast of Nauru; to the south of Kiribati, to the west of Tokelau, to the northwest of Wallis and Futuna and Samoa; and to the north of Fiji.
- **Option (b) is CORRECT.** It is a **volcanic archipelago**, meaning it is a group of islands formed by volcanic activity in the Pacific Ocean; specifically, it consists of three reef islands and six atolls, all originating from submerged volcanoes, with a **highest point of 4.6 meters above sea level**.
- The entire nation of Tuvalu comprises coral atolls. Only four countries in the world are entirely composed of atolls: Tuvalu, Parrot Island, Kiribati, and the Maldives.
- **Option (c) is INCORRECT.** Tuvalu is not a leader in geothermal energy production. It **has limited energy resources** and is more known for its vulnerability to climate change.
- **Option (d) is CORRECT.** It is often referred to as the “first country that will be totally submerged, due to climate change.”

**Source:** <https://www.thehindu.com/news/international/tuvalu-fights-to-keep-maritime-boundaries-amid-alarming-rise-in-sea-levels/article68680454.ece>

**44) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Art and culture**

**Context:** Prime Minister presented a Sohrai painting to the Russian president.

- **Statements 1 and 2 are CORRECT.** Sohrai paintings are ancient, indigenous mural art created by the tribal women of Hazaribagh area of Jharkhand. They were created



with the use of natural substances like charcoal, clay, or soil, depicting **elements of nature** like forests, rivers, animals amongst others.

**Source:** <https://timesofindia.indiatimes.com/city/ranchi/pm-narendra-modi-gifts-jharkhands-sohrai-painting-to-vladimir-putin-at-brics-summit/articleshow/114676169.cms>

**45) Answer: (a)**

**Difficulty Level: Hard**

**Micro Topic: Places in news**

**Context:** China's dam project across the Brahmaputra River.

- **Option (a) is CORRECT.** China is planning to build the world's largest hydropower dam across the Brahmaputra at the Great Bend region of the **Medog county in the Tibetan Autonomous Region (TAR)** in China. Its approval was granted on December 25, 2024. India, Bhutan and Bangladesh will have serious downstream implications of this 60 GW hyper-dam built upstream by China.

**Source:** <https://www.thehindu.com/news/international/the-implications-of-chinas-mega-dam-project-explained/article69064553.ece>

**46) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Military Exercises**

**Context:** Recent news regarding the Indian Navy's operational readiness and strategic posture in the Indian Ocean Region.

- **Option (c) is CORRECT.** **The Theatre Level Operational Exercise (TROPEX)** is a biennial, large-scale, Indian Navy exercise conducted in the Indian Ocean Region, involving the Indian Navy, Army, Air Force, and Coast Guard. The 2025 Edition of the Indian Navy's capstone **Theatre Level Operational Exercise (TROPEX)** conducted from **Jan to Mar 25 validated many of the Navy's concepts of operations.** The Exercise provided a valuable evaluation of the Navy's ability to respond to multifarious challenges in a synchronised and integrated manner to defend national maritime security interests.

**Source:** <https://pib.gov.in/PressReleasePage.aspx?PRID=2109094>

**47) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Current affairs**

**Context:** Union Carbide waste disposal-Bhopal

- **Statement 1 is CORRECT.** Methyl isocyanate leak caused the Bhopal gas tragedy of 1984. Methyl isocyanate is a colourless highly flammable liquid with a sharp, strong odour that evaporates quickly when exposed to the air and it is used in the **production of pesticides**, polyurethane foam, and plastics. It is known for its extreme toxicity and was involved in the Bhopal disaster.
- **Statement 2 is CORRECT.** MIC is also known for its extreme instability. It is highly reactive, particularly with water. When MIC comes into contact with water, it undergoes a violent exothermic reaction, meaning it releases a significant amount of heat. This



reaction also produces toxic gases, further amplifying the danger. This instability makes MIC storage and transportation exceptionally hazardous, as any accidental exposure to moisture can lead to severe consequences.

**Source:** <https://www.thehindu.com/news/national/madhya-pradesh/union-carbide-waste-disposal-in-pithampur-wont-harm-environment-says-mp-cm-mohan-yadav/article69053775.ece>

**48) Answer: (b) (Statement 2 is INCORRECT)**

**Difficulty Level: Hard**

**Micro Topic: Government Schemes**

**Context:** MPLADS (Member of Parliament Local Area Development Scheme (MPLADS) e-SAKSHI Mobile Application was launched recently.

- **Statement 1 is CORRECT.** MPLADS is an ongoing **Central Sector Scheme** which was launched in 1993-94. **The Ministry of Statistics and Programme Implementation** has been responsible for the policy formulation, release of funds and prescribing monitoring mechanism for implementation of the Scheme. The Scheme enables the Members of Parliament to recommend works for creation of durable community assets based on locally felt needs to be taken up in their constituencies in the area of national priorities namely drinking water, education, public health, sanitation, roads etc.
- **Statement 2 is INCORRECT.** MPLADS e-SAKSHI Mobile Application offers convenience and accessibility, **allowing MPs to propose, track, and oversee the projects in real-time, which enhances decision-making processes, enabling swift responses to emerging needs or issues.** Further, the mobile application will promote transparency by providing MPs with instant updates on the status and progress of their proposed projects and will also streamline the communication between MPs and relevant authorities, facilitating a more efficient exchange of information.
- **Statement 3 is CORRECT.** At least 15% of the Members of Parliament Local Area Development Scheme (MPLADS) funds are allocated for Scheduled Caste (SC) majority areas and 7.5% for Scheduled Tribe (ST) majority areas.

**Source:** <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2002610>

**49) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Defence technology**

**Context:** Test-launch of homegrown ASTRA Missile

- **Option (d) is CORRECT.** Recently, the Aeronautical Development Agency (ADA) successfully conducted test-launch of homegrown **ASTRA, Beyond Visual Range Air-to-Air Missile** (BVRAAM) from LCA AF MK1 prototype fighter aircraft. ASTRA missile designed and developed by DRDO is capable of engaging targets over 100km and equipped with advanced guidance and navigation capabilities. This allows the missile to destroy targets with greater accuracy. The missile is already inducted into the Indian Air Force.
- **Akash** missile is a **surface-to-air** defense missile, making it unsuitable for air-to-air combat.
- **NAG** is a third generation **Anti-Tank Guided Missile** with Fire and Forget top attack capability.



- **Agni** is an **intercontinental ballistic missile**.

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2111068>

50) Answer: (d)

Difficulty Level: Hard

Micro Topic: Current affairs

- **Option (d) is CORRECT.** In a first, the **Chhattisgarh state** has introduced an innovative plan that connects the ecosystem services of its forests with the Green Gross Domestic Product (Green GDP).
- The move is aimed to highlight the direct link between significant environmental contributions of forests like clean air, water conservation, biodiversity and the state's economic progress. The action plan is designed to ensure that economic development is achieved while preserving the pristine environment for future generations.

Source: <https://www.newindianexpress.com/nation/2025/Jan/01/chhattisgarh-first-state-to-link-forest-ecosystem-with-green-gdp>

51) Answer: (a)

Difficulty Level: Easy

Micro Topic: Philosophy of the Constitution

- **Statement I is CORRECT.** Constitutional supremacy is seen as a means of protecting the rights and freedoms of citizens, ensuring that the government operates within the bounds of the Constitution and is accountable to the people. The principle of constitutional supremacy in India ensures that the Constitution is the **supreme law of the land, and all government laws and actions must conform to its provisions**. The Constitution of India **guarantees fundamental rights to the citizens and provides for an independent judiciary to uphold the Constitution** and protect these rights.
- **Statement II is CORRECT.** Constitutional supremacy refers to the principle that the Constitution is the supreme law of the land and that all government laws and actions must comply with the Constitution. The Indian Constitution, adopted in 1950, lays down the framework for the government's functioning and establishes citizens' rights and liberties. The Constitution also establishes the judiciary as the guardian of the Constitution, with the power to review and strike down laws that are deemed unconstitutional. Therefore, **Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I.**

Source: <https://thelegalquorum.com/constitutional-supremacy-vs-parliamentary-sovereignty-in-india/>

52) Answer: (a)

Difficulty Level: Medium

Micro Topic: Judiciary

- **Option (a) is CORRECT.** **Article 142 of the Indian Constitution grants the Supreme Court a unique discretionary power to pass any decree or order necessary for doing complete justice in any cause or matter pending before it, potentially overriding**



**ordinary statutory laws.** Landmark judgments such as Delhi Judicial Service Association (1991), Union Carbide, and Vinay Chandra Mishra (1995) confirm that this constitutional authority enables the Court to deviate from statutory provisions when needed.

- However, the Court has consistently emphasized that this power must be exercised judiciously, respecting the principles of natural justice and the substantive rights of litigants, and is meant only for extraordinary circumstances. Thus, option (a) is correct because it accurately reflects the principle that the Court may deliver orders deviating from statutory law to fulfill its constitutional mandate, unlike the other options which either exaggerate its power or wrongly restrict its scope.

**Source:** <https://www.scobserver.in/journal/complete-justice-under-article-142-of-the-constitution/>

**53) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Tribunals**

**Context:** Recently, the Assam government asked the Border wing of the State's police not to forward cases of non-Muslims who entered India illegally before 2014 to the Foreigners Tribunals (FTs).

- **Statement 1 is CORRECT.** Foreign Tribunals are **quasi-judicial bodies formed through the Foreigners (Tribunals) Order of 1964 under Section 3 of the Foreigners' Act of 1946**, to let local authorities in a State refer a person suspected to be a foreigner to tribunals. Each FT is headed by a member drawn from judges, advocates, and civil servants with judicial experience.
- **Statement 2 is CORRECT.** When trying a case under the Code of Civil Procedure, 1908 in respect of the following topics, the Tribunal shall have the authority of a civil court; **Summoning and enforcing the attendance of any person and examining him; Requiring the discovery and production of any document; Issuing commissions for the examination of any witness.**
- **Statement 3 is CORRECT.** The Foreigners Tribunals (FTs), established under the Foreigners (Tribunals) Order, 1964, are currently operational only in Assam, while other states handle cases of suspected "illegal immigrants" through the Foreigners Act, 1946.

**Source:** <https://www.thehindu.com/news/national/assam/how-do-assams-foreigners-tribunals-function-explained/article68419385.ece/amp/>

**54) Answer: (c) (Options 1, 3 and 4 are CORRECT)**

**Difficulty Level: Medium**

**Micro Topic: Constitution**

- **Option 1, 3 and 4 are CORRECT.** The second Schedule deals with the provisions in relation to allowances, privileges and emoluments of:
  - ❖ President of India
  - ❖ Governors of Indian States
  - ❖ Speaker of Lok Sabha & Deputy Speaker of Lok Sabha
  - ❖ **Chairman of Rajya Sabha** & Deputy Chairman of Rajya Sabha



- ❖ Speaker and Deputy Speaker of Legislative Assemblies of Indian States
- ❖ Chairman and Deputy Chairman of Legislative Councils of the Indian States
- ❖ Supreme Court Judges
- ❖ **High Court Judges**
- ❖ **Comptroller & Auditor General of India (CAG)**
- **Option 2 is INCORRECT.** The original remuneration for the Prime Minister and other Ministers were specified in Part B of the second schedule, which were later removed by an amendment. **Prime Minister's salary as of now is governed under the purview of Salaries and Allowances of Ministers Act, 1952.**

**Source:** The Indian Constitution, Second Schedule.

**55) Answer: (d)**

**Difficulty Level: Medium**

**Micro Topic: Union Executive**

- **Statement 1 is CORRECT.** According to article 74 of the constitution, there shall be a Council of Ministers with the Prime Minister at the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice. **The Council of Ministers consists of three categories of ministers, namely, cabinet ministers, ministers of state, and deputy ministers.** The difference between them lies in their respective ranks, emoluments, and political importance. At the top of all these ministers stands the Prime Minister, the supreme governing authority of the country.
- **Statement 2 is CORRECT.** The term "Cabinet" was added to Article 352 of the Constitution through the 44th Constitutional Amendment Act in 1978, as it was not included in the original text. Even now, Article 352 merely defines the Cabinet as 'the council consisting of the Prime Minister and other Ministers of cabinet rank appointed under Article 75,' without detailing its powers and functions. In essence, its role within India's politico-administrative framework is derived from the conventions of the Parliamentary system, as evolved in Britain.
- **Statement 3 is CORRECT. Both Ministers of State and Deputy ministers are not members of the cabinet and do not attend the cabinet meetings** unless specially invited when something related to their ministries/departments are considered by the cabinet.

**Source:** Indian Polity by M Laxmikant 6th Edition Chapter 20.

**56) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Pollution**

**Context:** News report: Organophosphate, used in pesticides, caused deaths in J&K village - Seventeen people in Rajouri, Jammu & Kashmir, died from suspected organophosphate poisoning after consuming contaminated food or water.

- **Statements 1, 2 and 3 are INCORRECT. Organophosphates** are chemical compounds **formed through the esterification process involving phosphoric acid and alcohol.** These chemicals serve as **primary components in herbicides, pesticides, and**



**insecticides** and have extensive application in **manufacturing plastics and solvents**. Organophosphates are also the **primary constituents of nerve gas**.

- Exposure to organophosphates, whether acute or chronic, can lead to varying degrees of **toxicity in humans**, animals, plants, and insects.

**Source:** <https://indianexpress.com/article/india/jammu-kashmir-mystery-deaths-baddal-pesticides-likely-cause-9802448/>

**57) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Alternative energy**

**Context:** White hydrogen discovery in France - Researchers recently discovered one of the largest concentrations of White Hydrogen in France.

- **Option (c) is CORRECT. White hydrogen** refers to hydrogen that **occurs naturally in underground reservoirs**, formed through natural geological processes. It is considered to be a clean source of energy as it does not require other conversion techniques such as those used to produce green or grey hydrogen.

**Source:** <https://www.weforum.org/stories/2024/08/white-hydrogen-5-critical-questions-answered/>

**58) Answer: (a) (Pair 1 is CORRECTLY matched.)**

**Difficulty Level: Medium**

**Micro Topic: Species in news**

- **Pair 1 is CORRECTLY matched.** The **Asiatic lion** (*Panthera leo persica*) is considered a **keystone species** because its presence helps maintain the ecological balance in its habitat. It is also an **apex predator**, meaning it sits at the top of the food chain without natural predators. The conservation of Asiatic lions is crucial as their decline can lead to cascading effects in the ecosystem.
- **Pair 2 is INCORRECTLY matched.** **Mahseer** (*Tor* species) is an **indicator species**, particularly for **freshwater ecosystems**, as it is sensitive to water pollution and habitat degradation. However, it primarily signals **freshwater ecosystem health**, not marine ecosystem health.
- **Pair 3 is INCORRECTLY matched.** **Prosopis juliflora** is an **invasive species**. It was introduced to India and has aggressively spread across dry regions, including Rajasthan, Gujarat, and Tamil Nadu, affecting native biodiversity. Additionally, it is **not endemic to the Western Ghats** but is found in various arid and semi-arid regions of India.

**Source:** <https://www.worldanimalprotection.org.au/education/animal-facts/lions/>

**59) Answer: (c)**

**Difficulty Level: Easy**

**Micro Topic: Fauna and flora**

- **Option (c) is CORRECT. Allen's rule** states that **animals living in colder climates tend to have shorter appendages (ears, tails, limbs) to minimize heat loss, whereas those in warmer climates have longer appendages to facilitate heat dissipation.**



This is an example of how physiological features change according to climatic conditions. For instance, Arctic foxes have shorter ears compared to desert foxes, which have larger ears for better heat regulation. The rule applies to many endothermic animals, including mammals and birds.

**Source:** <https://ncert.nic.in/pdf/publication/exemplarproblem/classXII/biology/leep413.pdf>

**60) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Agriculture**

- **Option (c) is CORRECT.** **Bio capsules** are an innovative technology developed by ICAR-Indian Institute of Spices Research, Kozhikode, **for the smart delivery of agriculturally important microorganisms.** The bio-capsules containing beneficial micro-organisms are generally used for promoting plant growth, providing protection against biotic stresses and enhancing availability of nutrients. This technology involves encapsulating beneficial microorganisms in a gelatin capsule, enabling their efficient delivery to agricultural crops. The bio capsules enhance soil nutrient solubilisation, promote plant growth, and improve yield. The main components of the bio capsules include the microbial strain, a protecting agent, a buffering agent, essential nutrients, and a bulking agent, all packed within a hard gelatin capsule.

**Source:** <https://www.ipcnet.org/research/biocapsules/>

**61) Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Basic science**

**Context:** The Hindu article: SpaceX Starlink to bring satellite internet to India.

- **Statement 1 is CORRECT.** **Low Earth Orbit (LEO) satellites**, positioned at **altitudes within 2,000 km**, can provide steady internet connectivity to specific areas. LEO satellites offer low latency and high-speed data transmission because of their proximity to Earth. Networks like **Starlink** use LEO satellites to provide global internet coverage, especially in remote and underserved areas. However, **maintaining steady coverage requires a large network of satellites due to their fast orbits.**
- **Statement 2 is INCORRECT.** While **geostationary satellites (positioned at 35,786 km above the equator)** enable broad coverage and continuous communication, they introduce **higher latency due to the longer signal travel time.** This makes them unsuitable for real-time communication requiring minimal delay.

**Source:** <https://www.nasa.gov/humans-in-space/leo-economy-frequently-asked-questions/>

**62) Answer: (a)**

**Difficulty Level: Medium**

**Micro Topic: Biotechnology**

- **Statement 1 is CORRECT.** Biosimilars, a category of biologic medications, are offering new hope for patients by providing cost-effective alternatives to original biologics, which



are often expensive and complex. Biosimilars are a type of biologic medication that is safe and effective for treating many illnesses. A biosimilar and its original biologic have the same treatment risks and benefits. However, biosimilars may be available at a lower cost than the original biologics. **Biosimilars are highly similar to their reference biologics** but offer comparable safety, efficacy, and potency. They play a significant role in treating diseases like cancer, diabetes, and autoimmune disorders, making them essential in modern healthcare.

- **Statement 2 is INCORRECT.** India, with its strong pharmaceutical sector, **is at the forefront of biosimilar production. The country approved its first biosimilar in 2000, making it one of the early adopters globally.** Since then, Indian companies have not only supplied the domestic market but have also become global leaders in biosimilars, contributing significantly to making biologic therapies more accessible.

**Source:** <https://www.pfizer.com/news/articles>

### 63) Answer: (a)

**Difficulty Level: Hard**

**Micro Topic: Technology**

**Context:** Novel technique unearthed to enhance next-generation lighting.

- **Statement 1 is CORRECT.** Lighting consumes about 20% of the global electricity consumption. Hence, frequent advancements are being carried out in order to increase energy efficiency. From the initial inefficient incandescent and fluorescent lamps to the LEDs in the 1960s, the next frontier for lighting comes in the way of Perovskite LEDs (PeLEDs). Perovskite are the class of compounds having the same crystal structure as the  $\text{CaTiO}_3$ - Calcium Titanate. PeLEDs combine the advantages of OLEDs and QLEDs, positioning itself as an excellent candidate for next generation lighting. Further it promises high efficiency while ensuring low manufacturing costs.
- **Statement 2 is INCORRECT.** Perovskite nanocrystals are known to be **highly sensitive** to environmental factors like **temperature, moisture**, which can degrade their performance over time. Their widespread application is limited by challenges of such sensitivity to heat and moisture, as well as colour instability caused by anion migration (which occurs when halide ions -- chloride, bromide, or iodide move between quantum dots in mixed layers). Researchers are actively working on improving their stability. Recently, researchers at the Centre for Nano and Soft Matter Sciences (CeNS) in Bengaluru, an autonomous institute under the Department of Science and Technology (DST), have developed an innovative method to minimize anion migration in  $\text{CsPbX}_3$  perovskite nanocrystals.
- **Statement 3 is INCORRECT.** Though Perovskite solar cells (PSCs) promise high efficiency and low manufacturing costs, most **formulations contain lead**, which raises health and environmental concerns. Metal halide perovskite solar cells (PSC), a promising renewable energy technology, contain a soluble form of lead, which raises concerns about environmental and health risks when this technology is commercialized on a large scale. On average the lead leaching from a broken PSC module may exceed safe limits, unless a lead sequestration layer is included in the module.

**Source:** <https://dst.gov.in/novel-technique-unearthed-enhance-next-generation-lighting>



**64) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Semiconductor**

- **Statement 1 is CORRECT.** Doping is a crucial technique in semiconductor manufacturing where controlled amounts of impurity atoms (such as phosphorus or boron) are introduced into intrinsic semiconductors like silicon or germanium. This process creates either an **n-type** (electron-rich) or **p-type** (hole-rich) semiconductor, which enhances its electrical conductivity. Without doping, pure semiconductors (intrinsic) have very low conductivity, making them impractical for most electronic applications.
- **Statement 2 is CORRECT.** Intrinsic semiconductors like silicon and germanium behave as insulators at very low temperatures because there are very few free charge carriers. As temperature rises, thermal energy excites electrons from the valence band to the conduction band, increasing conductivity. When doped with impurities, additional charge carriers (electrons or holes) are introduced, further improving conductivity.
- **Statement 3 is CORRECT.** A semiconductor diode is made from a p-n junction, where the p-type and n-type materials meet, forming a depletion region that controls current flow.
- A PN-junction diode is formed when a p-type semiconductor is fused to an n-type semiconductor creating a potential barrier voltage across the diode junction. A PN Junction Diode is one of the simplest semiconductor devices around, and which has the electrical characteristic of passing current through itself in one direction only.

**Source:** <https://www.investopedia.com/terms/s/semiconductor.asp>

**65) Answer: (b) (Options 2 and 3 are CORRECT )**

**Difficulty Level: Hard**

**Micro Topic: Terms in News**

- **Statement 1 is INCORRECT.** Moiré materials are **not exclusively made from graphene**; they can also be created from other two-dimensional materials such as tungsten diselenide (WSe<sub>2</sub>). While twisted bilayer graphene was the first moiré material discovered to exhibit superconductivity, researchers have since found similar properties in semiconductor-based moiré systems. This broadens the scope of moiré materials beyond just carbon-based structures. Therefore, restricting moiré materials to only graphene is incorrect.
- **Statement 2 is CORRECT.** Moiré materials consist of stacked two-dimensional atomic layers that are slightly misaligned by a small twist angle, forming unique electronic and quantum properties. This twist creates a moiré pattern, altering the electronic band structure and leading to new behaviours not seen in the individual 2D layers. These materials exhibit exotic properties like correlated electron behaviour, superconductivity, and topological states. As a result, they effectively function as two-dimensional atomic arrangements with a different type of physics.
- **Statement 3 is CORRECT.** Certain moiré materials, including those based on graphene and tungsten diselenide, have been found to exhibit superconductivity when their electronic states are appropriately filled. The flat electronic bands formed due to the



moiré pattern enhance electron interactions, leading to the formation of Cooper pairs, which enable zero electrical resistance.

**Source:** <https://www.thehindu.com/sci-tech/science/new-moir%C3%A9-superconductor-opens-the-door-to-new-quantum-materials/article68918187.ece>

**66) Answer: (b) (Options 2 and 3 are CORRECT.)**

**Difficulty Level: Hard**

**Micro Topic: Banking**

- **Option 1 is INCORRECT.** Banks are required to maintain a certain percentage of their deposits with the central bank as **CRR**. These reserves **do not earn interest**. The CRR is a tool used by the central bank to control the money supply and is not an investment for banks.
- **Option 2 is CORRECT.** In a VRR auction, banks lend their excess funds to the central bank for a specified period and earn interest on those funds. This is a direct interest-earning activity for banks.
- **Option 3 is CORRECT.** The SDF allows banks to deposit their surplus funds with the central bank without providing collateral. The central bank pays interest on these deposits, making it another avenue for banks to earn interest.

**Source:** <https://www.rbi.org.in/commonman/english/Scripts/Notification.aspx?Id=891>

**67) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Banking**

**Context:** S&P global report-Indian banks to sustain higher leverage ratios.

- **Option (c) is CORRECT.** The Basel Committee on Banking Supervision (BCBS) introduced a leverage ratio in the 2010 Basel III package of reforms. The **leverage ratio** is defined as the **capital measure divided by the exposure measure**, expressed as a percentage.
- Leverage Ratio =  $\frac{\text{Capital measure}}{\text{Exposure measure}}$
- The capital measure is Tier 1 capital as defined for the purposes of the Basel III risk-based capital framework. In other words, the capital measure for the leverage ratio at a particular point in time is the applicable **Tier 1 capital** measure at that time under the risk-based framework.
- Total exposure includes both on-balance sheet and off-balance sheet assets.

**Source:** [https://www.bis.org/fsi/fsisummaries/b3\\_lrf.pdf](https://www.bis.org/fsi/fsisummaries/b3_lrf.pdf)

**68) Answer: (c) (Options 1, 2 and 4 are CORRECT.)**

**Difficulty Level: Medium**

**Micro Topic: Inflation**

- **Option 1 is CORRECT.** Maintaining buffer stocks of essential food grains like rice, wheat, and pulses helps stabilize food prices by ensuring a steady supply during shortages. The government can release stocks in the market when prices rise excessively



and procure surplus during periods of overproduction, thereby easing out price volatility.

- **Option 2 is CORRECT.** Diversifying food supplies, both in terms of the variety of crops produced domestically and through strategic imports, can mitigate risks of price volatility. If a weather shock damages the production of one staple, having alternative food sources available can prevent drastic price spikes. Furthermore, promoting the cultivation and consumption of a wider range of nutritious foods can create a more resilient and stable food system, less susceptible to the price fluctuations of a single commodity.
- **Option 3 is INCORRECT.** **Changing the weightage** of food items in the Consumer Price Index (CPI) may alter the measurement of inflation but **will not directly address the underlying causes** of food price volatility. CPI reflects price trends rather than influencing them.
- **Option 4 is CORRECT.** Contract farming helps stabilize prices by ensuring farmers receive a guaranteed price for their produce. It also promotes better planning, reduces market uncertainty, and ensures a steady supply of food products to the market.

**Source:** <https://www.thehindu.com/business/food-price-volatility-remains-a-contingent-risk-rbi-officials/article68664167.ece>

**69) Answer: (b)**

**Difficulty Level: Hard**

**Micro Topic: Mineral resources**

**Context:** Prime minister's visit to the United States.

- **Option (b) is CORRECT.** The **United States** is the largest crude oil producer due to advanced extraction techniques like shale oil production and fracking. **Saudi Arabia** follows as the second-largest producer, benefiting from vast reserves. **China** ranks third, producing a significant amount of crude oil to meet its high domestic energy demand. **Kuwait**, though a major player in the oil market, ranks lower than the others in terms of production volume.

**Source:** <https://indianexpress.com/article/trending/top-10-listing/top-10-largest-oil-producing-and-consuming-countries-2024-india-standing-9464976/>

**70) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: International agencies**

- **Option (c) is INCORRECT.** **Investment Project Financing (IPF)** – IPF is a financial instrument of the World Bank, aimed at supporting specific development projects.
- **Special Drawing Rights (SDR)** – SDR is an international reserve asset created by the IMF to supplement member countries' official reserves.
- **Extended Fund Facility (EFF)** – EFF is an IMF program that provides financial assistance to countries facing balance of payments issues.
- **Poverty Reduction and Growth Trust (PRGT)** – PRGT is an IMF initiative that provides concessional loans to low-income countries to promote sustainable growth and reduce poverty.



**Source:** <https://www.imf.org/en/About/Factsheets/IMF-Support-for-Low-Income-Countries>

**71) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Statutory bodies**

**Context:** World Consumer Rights Day, observed annually on March 15.

- **Statement 1 is CORRECT.** The National Consumer Disputes Redressal Commission (NCDRC) is a quasi-judicial commission in India which was set up in 1988 under the Consumer Protection Act of 1986. Its head office is in New Delhi. The Commission is headed by a sitting or a retired Judge of the Hon'ble Supreme Court of India or a sitting or a retired Chief Justice of an Hon'ble High Court.
- **Statement 2 is CORRECT.** Being a quasi-judicial body, the nature of work in the Commission is different from other government departments. **Even the Central Government or any State Government can file a Complaint in the Consumer Commissions** as they are covered by the definition of “Complainant” as defined in Section 2 (5) of the Act.

**Source:** <https://pib.gov.in/PressReleasePage.aspx?PRID=2111397>

**72) Answer: (b)**

**Difficulty Level: Medium**

**Micro Topic: Capital market**

**Context:** Gold prices hit all-time high in Jan 2025.

- **Option (b) is CORRECT.** Gold, a hedge against economic uncertainties and inflation, has risen about 14% so far in 2025. The war in Ukraine and the conflict between Israel and Hamas in the Middle East – further complicated by Houthi missile attacks on ships in the Red Sea – highlight the extent to which geopolitical developments are a key determinant of global economic performance in 2024.
- **During periods of geopolitical uncertainty, investors tend to become risk-averse and seek safe-haven assets.** Gold has historically been considered a safe store of value during turbulent times due to its intrinsic worth and limited supply. Therefore, investors are likely to sell riskier assets, including bonds (especially those perceived as less secure), and move their capital into gold to preserve their wealth.
- Corporate bonds are considered riskier investments, and uncertainty increases the potential for defaults.
- Shift from short-term to long-term bonds might occur as part of a broader flight to safety, but the primary move is usually towards less risky asset classes like gold, which is underlined by the current rise in gold prices.
- Equities are generally considered risky assets, and geopolitical instability can negatively impact corporate earnings and market sentiment, leading to decreased investment in stocks.

**Source:** <https://www.livemint.com/market/stock-market-news/geopolitical-factors-economic-uncertainty-behind-historic-usd-3000-gold-price-surge-11742024967149.html>



73) Answer: (b)

**Difficulty Level: Hard**

**Micro Topic: Financial market**

**Context:** State Bank of India has become the first trading-cum-clearing member at India International Bullion Exchange (IIBX).

- **Statement 1 is CORRECT. India International Bullion Exchange (IIBX)** is the country's first bullion exchange. It was established in 2022 at GIFT International Financial Services Centre (IFSC), Gandhinagar.
- **Statement 2 is INCORRECT.** It is not regulated by SEBI but by **International Financial Services Centres Authority (IFSCA).**

**Source:** <https://timesofindia.indiatimes.com/city/ahmedabad/sbi-becomes-first-trading-clearing-member-of-iibx/articleshow/110098300.cms>

74) Answer: (c)

**Difficulty Level: Medium**

**Micro Topic: Money supply**

**Context:** Recently, Zimbabwe launched a gold-backed currency called ZiG.

- The gold standard is a monetary system in which a currency's value is pegged to gold.
- **Option 1 is CORRECT. Under the Gold Standard, each unit of currency is assigned a specific value in terms of gold.** For Example: If 1 unit of currency = 1 gram of gold, then the currency's value would remain stable relative to gold. This fixed exchange rate reduces currency fluctuations and inflation.
- **Option 2 is INCORRECT. Fiat money is currency that has value only because the government declares it legal tender, not because it is backed by a physical commodity like gold. Under the Gold Standard, money is backed by actual gold reserves, making it a commodity-backed currency, not fiat money.** Today's currencies (like the Indian Rupee or US Dollar) are fiat currencies, meaning their value is determined by trust in the issuing government rather than a tangible asset.
- **Option 3 is CORRECT. One of the fundamental features of the Gold Standard is that holders of paper currency could exchange it for a fixed amount of gold at any time.** Governments have to maintain sufficient gold reserves to honor such exchanges.
- **Option 4 is CORRECT. Since each unit of currency is backed by gold, the money supply is constrained by the country's gold reserves.** If a country ran low on gold reserves, it could not issue more currency, limiting its ability to respond to economic crises. This constraint is a major reason why countries eventually abandoned the Gold Standard, as it restricted economic flexibility.

**Source:** <https://www.thehindu.com/news/international/zimbabwes-gold-backed-currency-zig-all-you-need-to-know/article68220482.ece>

75) Answer: (b)

**Difficulty Level: Medium**

**Micro Topic: Infrastructure**

- **Option (b) is CORRECT. The National Monetisation Program aims to unlock the value of government-owned assets by leasing them** to the private sector while ensuring their ownership remains with the government.



**Source:** <https://ppp.worldbank.org/public-private-partnership/library/benchmarking-infrastructure-development>

**76) Answer: (d)**

**Difficulty Level: Easy**

**Micro Topic: Mauryan Period**

- **Statement 1 is INCORRECT.** The history of Ashoka is reconstructed on the basis of his inscriptions. Pillar edicts were mostly inscribed on, in the latter parts of his reign on well-polished sandstone monolithic pillars. They were largely confined to the Ganges plain (since they were transported by the river).
- **Statement 2 is INCORRECT.** The Major and Minor Rock edicts of his reign were inscribed on conveniently located rock surfaces and were widely distributed throughout the empire, especially in the areas of public settlements where people can easily read these edicts.

**Source:** Ancient and Medieval India by Poonam Dalal Dahiya (Page no: 223)

**77) Answer: (a) (Row 1 is CORRECTLY matched.)**

**Difficulty Level: Hard**

**Micro Topic: Buddhism**

- **Row 1 is CORRECTLY matched.** Sarnath became part of the Kosala Kingdom after Prasenajit annexed Kashi janapada to Kosala. King Prasenjit was the ruler of Kosala when Buddha attained Parinirvana.
- **Row 2 is INCORRECTLY matched.** Bodh Gaya was in Magadha, but **King Suddhodana** who was also Buddha's father, **was not the ruler of Magadha.**
- **Row 3 is INCORRECTLY matched.** Kushinagar was part of the Malla Kingdom, but King **Bimbisara was the ruler of Magadha.** The Malla kingdom had a republican form of governance.

**Source:** NCERT - Themes in Indian history - Thinkers, Beliefs and Buildings, Page no:95

**78) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Vedic Period**

- **Statement 1 is CORRECT. Early Vedic society, as depicted in the Rigveda, was predominantly pastoral, with the economy largely based on animal husbandry. Cattle were the main form of wealth.** The term for war, "gavisthi", literally means "search for cows", indicating the importance of cattle. Wars were often fought over cattle, and gifts to priests were given in terms of cows and women slaves, not land. Although the Rig Vedic people occasionally occupied land, it did not constitute a well-established type of private property.
- **Statement 2 is CORRECT.** The administrative machinery of the Aryans in the Rig Vedic period worked with the tribal chief in the centre, because of his successful leadership in war. He was called **rajan. It seems that in the Rig Vedic period the king's post was hereditary.** However, the king did not exercise unlimited power, for he had to reckon with the tribal organizations. Although his post was hereditary, we have also



some traces of election by the tribal assembly called the samiti. The king was called the protector of his tribe. He protected its cattle, fought its wars and offered prayers to gods on its behalf.

**Source:** Ancient India by RS Sharma - Chapter 7 - Advent of the Aryans and the Age of the Rig Veda - Pg: 45-51

**79) Answer: (a)**

**Difficulty Level: Hard**

**Micro Topic: Ancient kingdoms**

- **Statement 1 is CORRECT.** From the second half of the 4th century – 6th century, several states were formed in Orissa. The most important of those was the State of the **Matharas/Pitribhaktas**. Matharas dominated the area **between the Mahanadi and the Krishna**.
- **Statement 2 is INCORRECT.** The **deltaic portion of Bengal formed by the Brahmaputra, covering South-East Bengal, was called Samatata**. From about AD 525 onwards, the area developed a fairly organized state covering Samatata and a portion of Vanga, which lay on the western boundary of Samatata. It was called the Kingdom of Samatata or Vanga.
- **Kamarupa** (also called Pragjyotisha) was a historical kingdom of **Assam**. It was based in the Brahmaputra valley. The kingdom of Kamarupa was a vast one, from the Kartowa river in the west and up to the border of Nepal and Bhutan in the east.

**Source:** <https://kamrup.assam.gov.in/about-district/district-glance>

**80) Answer: (d)**

**Difficulty Level: Medium**

**Micro Topic: Ancient kingdoms**

- **Option (d) is CORRECT.** The Vakataka Dynasty was a prominent force in the Deccan region of India, ruling from the **3rd to the 5th century CE**, and known for their patronage of art, architecture, and literature, including the Ajanta Caves. In the 3<sup>rd</sup> century CE, in peninsular India, especially in northern Maharashtra and Vidarbha, the Satavahanas were succeeded by a local power known as the Vakatakas. The Vakatakas were contemporaries of the Guptas in northern India.

**Source:** <https://www.britannica.com/topic/Vakataka-dynasty>

**81) Answer: (b)**

**Difficulty Level: Medium**

**Micro Topic: Terms in ancient India**

- **Option (b) is CORRECT.** Bali was a **voluntary payment made by the tribesmen** to their chiefs in the Vedic times. During mahajanapada period, 'bali' became a compulsory payment and special officers called *balisadhakas* were appointed to collect it.

**Source:** Ancient and Medieval India by Poonam Dalal Dahiya (Page no: 149)



**82) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Jainism**

- **Statement 1 is CORRECT.** Jaina doctrine of Anekantavada is literally the doctrine of 'non-onesidedness' or 'manifoldness' or 'non-absolutism'. It is one of the basic principles of Jainism that encourages acceptance of relativism and pluralism. According to this doctrine, truth and reality are perceived differently from different points of view, and no single point of view is the complete truth.
- **Statement 2 is CORRECT.** The doctrine of Syadavada (doctrine of 'may be') emphasises on the relativity of all knowledge. According to this doctrine, all judgments are conditional, holding good only in certain conditions, circumstances, or senses.
- **Statement 3 is CORRECT.** The doctrine of Nayavada signifies the system of describing reality from different points of view. 'Naya' can be understood as partially true statements but they cannot lay claim to absolute validity. 'Naya' can also be defined as a particular opinion framed with a view-point, a view-point which does not rule out other different view-points, and is, therefore, expressive of a partial truth about an object, as entertained by a knowing agent.

**Source:** Ancient and Medieval India by Poonam Dalal Dahiya (Page no: 191).

**83) Answer: (b) (Statements 1 and 3 are CORRECT)**

**Difficulty Level: Hard**

**Micro Topic: Non-cooperation movement**

- **Statement 1 is CORRECT.** The Nagpur Session of the Indian National Congress (December 1920) formally approved Gandhi's call for Non-Cooperation, making it an official Congress movement. This session also adopted the principles of swaraj (self-rule) through non-violent resistance.
- **Statement 2 is INCORRECT.** Unlike the **Quit India Movement (1942), where ministers resigned, there were no Indian ministers in the British government in 1920 to resign.** However, thousands of lawyers, students, and professionals resigned from government jobs and institutions in protest.
- **Statement 3 is CORRECT.** The Non-Cooperation Movement was launched after the Jallianwala Bagh massacre (April 1919) and the Khilafat issue (which emerged post-World War I). Gandhi merged both causes to unite Hindus and Muslims against British rule.

**Source:** NCERT class 12 Themes in Indian History III, Theme 11, page no 289 to 294, Spectrum's Modern India by Rajiv Ahir 2017 edition, page 371

**84) Answer: (a)**

**Difficulty level: Medium**

**Micro Topic: Economic impact of British rule**

- **Statement 1 is CORRECT.** The Permanent Settlement of 1793 led to the emergence of absentee landlordism in India by granting landownership rights to zamindars, who were often not directly involved in agriculture. Since the system required them to pay a fixed revenue to the British government regardless of agricultural output, many zamindars prioritized rent collection over land improvement. As a result, they frequently sublet



their estates to intermediaries while residing in cities, leading to rural stagnation and widespread distress.

- **Statement 2 is INCORRECT.** Naoroji's Drain of Wealth theory highlighted **multiple factors like home charges, salaries of British officials, trade policies, and railway expenses, not just land revenue extraction**, as reasons for India's economic decline.

**Source:** [https://www.nios.ac.in/media/documents/SrSec315NEW/History\\_Module3.pdf](https://www.nios.ac.in/media/documents/SrSec315NEW/History_Module3.pdf)

**85) Answer: (a)**

**Difficulty level: Medium**

**Micro Topic: Books and journals**

- **Option (a) is CORRECT.** Gopal Hari Deshmukh ('Lokhitwadi') was associated with newspapers like Hitechhu, Gyan Prakash, and Indu Prakash to promote social reforms, rationalism, and modernization. He used these platforms to advocate for widow remarriage, caste reform, and female education. He held the post of a judge under British raj. He wrote for a weekly Prabhakar under the pen name of Lokahitawadi. Kesari and Maratha were associated with Bal Gangadhar Tilak, while Sudhakar was linked to Gopal Ganesh Agarkar. Sambad Kaumudi was started by Raja Ram Mohan Roy, Rast Goftar by Dadabhai Naoroji, and Hindu Patriot by Harish Chandra Mukherjee. Prarthana Samaj Patrika was linked to the Prarthana Samaj, Indian Mirror to Keshab Chandra Sen, and Harijan to Mahatma Gandhi.

**Sources:** Spectrum's Modern India by Rajiv Ahir 2017 edition, Survey of socio-cultural reform movements, page no 238

**86) Answer: (d)**

**Difficulty level: Easy**

**Micro Topic: Ghadar Movement**

- **Statement I is INCORRECT.** The Ghadar **Movement failed to create large-scale revolts within India** as British intelligence intercepted communications and arrested key leaders. The planned mutiny in Punjab (1915), led by Rash Behari Bose and Kartar Singh Sarabha, was crushed before it could materialize.
- **Statement II is CORRECT.** The *Ghadar* movement was a revolutionary initiative by the Indian diaspora in North America. It attracted sizable support from Indian immigrants in Canada, East Africa, and Southeast Asia. The Ghadar Party (founded in 1913) aimed to instil nationalism among Indian immigrants and encouraged them to return to India to support armed uprisings.

**Source:** <https://egyankosh.ac.in/bitstream/123456789/19950/1/Unit-15.pdf>

**87) Answer: (c)**

**Difficulty level: Easy**

**Micro Topic: Viceroy**

- **Option (c) is INCORRECT.** The Ilbert Bill (1883) was a legislative proposal introduced during the tenure of Lord Ripon, the Viceroy of India (1880-84). It aimed to grant Indian judges the authority to try European offenders in criminal cases. The Ilbert Bill, named after Sir Courtenay Ilbert, the Law Member of the Viceroy's Council, sought to remove this inequality by allowing Indian judges to try European offenders at the district and



session courts level. The bill triggered widespread opposition from the European community in India, particularly British civil servants, planters, and businessmen. European elites feared that Indian judges would misuse their power and that British prestige and authority would be undermined. **Due to the severe backlash, the British government compromised by modifying the bill.** Modified bill has provisions like Indian judges could try European offenders, but the defendant retained the right to request a jury trial with at least half of its members being European.

**Source:** Spectrum's Modern India by Rajiv Ahir 2017 edition, Appendices- governor general and viceroys, Page no:269 and 754

**88) Answer: (d)**

**Difficulty level: Hard**

**Micro Topic: Socio-religious movements**

- **Statement 1 is CORRECT.** The Self-Respect Movement, founded by Periyar E.V. Ramasamy in 1925, aimed at uplifting backward classes and ensuring equal rights and social justice through self-respect and dignity.
- **Statement 2 is CORRECT.** The movement aimed at the rejection of the brahminical religion and culture which Naicker felt was the prime instrument of exploitation of the lower castes. It opposed Brahmin dominance and the imposition of North Indian Sanskritic traditions, and advocated for Dravidian identity and Tamil culture.
- **Statement 3 is CORRECT.** In the late 1930s, the Self-Respect Movement merged with the Justice Party, which shared similar goals of social justice and anti-Brahminism. This merger eventually led to the formation of the Dravidar Kazhagam (DK) in 1944.
- **Statement 4 is CORRECT.** The movement promoted rationalism, criticized religious orthodoxy, and opposed superstitions, urging people to rely on reason rather than blind faith.

**Source:** <https://egyankosh.ac.in/bitstream/123456789/20645/1/Unit-13.pdf>

**89) Answer: (d)**

**Difficulty Level: Hard**

**Micro Topic: Medieval architecture**

- **Option (d) is CORRECT.** 'Hauz-i-Sultani' was commissioned by **Sultan Iltutmish**, for which he won universal respect for constructing a **large reservoir** just outside Dehli-i-Kuhna. It was called the Hauz-i-Sultani or the King's Reservoir. It was not only a source of water supply for the city but also a place of recreation and relaxation for the royals and nobles. The pond is still present in **Mehrauli**.

**Source:** NCERT VII, Our Past, Chapter 5

**90) Answer: (c)**

**Difficulty Level: Medium**

**Micro Topic: Bhakti movement**

- **Option (c) is CORRECT.** **Baba Guru Nanak (1469-1539)** was born in a Hindu merchant family in a village called Nankana Sahib near the **river Ravi** in the predominantly Muslim **Punjab**. He trained to be an **accountant** and studied Persian.



He was married at a young age but spent most of his time among sufis and bhaktas. He also travelled widely. Baba Guru Nanak organized his followers into a community. He **set up rules for congregational worship (sangat)** involving collective recitation. He **appointed one of his disciples, Angad, to succeed him** as the preceptor (guru), and this practice was followed for nearly 200 years. Guru Nanak spent his final years in Kartarpur. It was in Kartarpur that Guru Nanak laid the foundations of the new faith, **Sikhism**, and introduced **Guru Ka Langar** (“the Guru’s Community Kitchen”), establishing it as a core tradition of service and community.

- The poet-saint described in the passage is **Guru Nanak (Option c)**. Born in 1469 in a Hindu merchant family in Nankana Sahib, near the river Ravi in Punjab, Guru Nanak was trained as an accountant and learned Persian. Despite his early marriage, he spent much of his life in the company of sufis and bhaktas, exploring spiritual paths. Guru Nanak is known for advocating **nirguna bhakti**, a form of devotion that emphasized the worship of the formless Divine (Nirguna Brahman) over idol worship. He rejected external religious rituals such as sacrifices, ritual baths, image worship, austerities, and the scriptures of both Hindus and Muslims, believing that these were distractions from the true connection to the Divine.
- Instead, Guru Nanak proposed a simple path to spirituality: the remembrance and repetition of the Divine Name (Naam Simran). He expressed his ideas through hymns called **Shabads**, which became integral to Sikhism, a new faith he founded. His teachings emphasized devotion, equality, and service. Guru Nanak’s foundation of Sikhism and the establishment of **Guru Ka Langar** (community kitchen) promoted principles of community service and equality, making him a significant figure in the history of religious reform.

**Source:** Theme 6, NCERT Class XII, Themes in Indian History part- II, Page-163

**91) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Mughal period**

- **Pairs 1, 2 and 3 are CORRECTLY matched. Ain-i-Akbari written by Abul Fazl offers an in-depth look into the administration, society, and culture of the Mughal Empire during Akbar's rule.** Akbar classified the lands and fixed a different revenue to be paid by each.
- **Polaj** is land which is **annually cultivated** for each crop in succession and was never allowed to lie fallow.
- **Parauti** is land **left out of cultivation** for a time that it may recover its strength.
- **Chachar** is land that has lain **fallow for three or four years**.
- **Banjar** is land **uncultivated for five years and more**.
- Of the Polaj and Parauti kinds of land, there are three classes, good middling, and bad. They add together the produce of each sort, and the third of this represents the medium produce, one-third part of which is exacted as the Royal dues.

**Sources:** Theme 8, NCERT Class XII, Themes in Indian History part- II, Page-214



92) Answer: (d)

**Difficulty Level: Hard**

**Micro Topic: Mughal period**

**Context:** Controversy regarding Aurangzeb tomb in Maharashtra.

- **Statement 1 is INCORRECT.** Dara Shikoh did not receive support from the **Marathas** during his conflict with Aurangzeb. Instead, he waged a series of battles against his brother, ultimately leading to his defeat and execution. The Marathas were involved in their resistance against Mughal authority during Aurangzeb's reign, but they did not ally with Dara in his struggle for the throne.
- **Statement 2 is INCORRECT.** The Ahoms were temporarily defeated by the Mughal forces under Aurangzeb in 1663 when Mir Jumla, the Mughal general, captured the Ahom capital, Garhgaon. This led to the signing of the Treaty of Ghilajharighat in 1663, which resulted in the cession of some territories and a temporary peace. However, **this defeat was not the end of the Ahom resistance.** In 1671, the Ahom forces, led by the able general Lachit Borphukan, faced the Mughal army once again in the **Battle of Saraighat**. Despite being outnumbered, the **Ahoms defeated the larger Mughal army** under Raja Ram Singh through brilliant military strategy, including the effective use of terrain, guerrilla tactics, and psychological warfare. They also exploited the weakness of the Mughal navy, which played a crucial role in the outcome. The Ahoms continued to resist Mughal influence, and **their rebellion persisted into the 1680s**, further asserting their independence from the Mughal Empire.

**Source:** Medieval India by Satish Chandra Page No: 347.

93) Answer: (d)

**Difficulty Level: Hard**

**Micro Topic: Medieval literature**

- **Option (d) is CORRECT.** "Khazain-ul-Futuh," meaning "The Treasure-Chambers of the Victories" or "The History of Ala," is a prose work by the Indian poet and historian Amir Khusrau, detailing the reign of Sultan Alauddin Khalji, particularly his South Indian campaigns. It was written in Persian and reflects the political and administrative developments of the time.

**Source:** <https://www.britannica.com/biography/Amir-Khosrow#ref150009>

94) Answer: (d)

**Difficulty Level: Medium**

**Micro Topic: Mangroves**

**Context:** 'The State of the World's Mangroves, 2024' report released by Global Mangrove Alliance (GMA).

- **Statement 1 is CORRECT.** According to 'The State of the World's Mangroves, 2024', the report released by the Global Mangrove Alliance (GMA), **large areas of natural mangrove forests along the southern Indian coast are critically endangered, while those on the west coast, including in Gujarat, are at the risk of collapsing** due to human activities such as **shrimp aquaculture development and natural threats like tropical storms.**



- **Statement 2 is CORRECT.** The GMA report highlighted that mangroves in Lakshadweep archipelago and on **the coast of Tamil Nadu are critically endangered, as they face rising sea levels due to global warming.** The report also underlined that mangrove on the western seaboard – extending from Gujarat in the west to Kerala in the southern peninsular India – are vulnerable to collapse. **Statement II is the CORRECT explanation to the Statement I.**
- **Statement 3 is CORRECT.** The report highlighted that **shrimp aquaculture is a major driver behind the loss.** “From the 1980s, what had been aptly termed a ‘slash and burn industry’ has wreaked havoc on both mangroves and the traditional coastal communities. Significant losses are still occurring in Kerala and eastern India, Indonesia, northeast Brazil and northwest Mexico, where the industry is still expanding.” **Statement III is the CORRECT explanation to the Statement I.**

**Source:** <https://indianexpress.com/article/cities/ahmedabad/mangroves-ecosystem-india-vulnerable-to-collapse-due-to-cyclones-shrimp-aquaculture-says-report-9478628/>

**95) Answer: (b) (Pairs 1 and 2 are CORRECTLY matched)**

**Difficulty Level: Hard**

**Micro Topic: Infrastructure**

- **Pair 1 is CORRECTLY matched.** The **Chenab Rail Bridge**, located in Jammu and Kashmir, stands **at a height of 359 meters above the Chenab River, making it the world's highest railway bridge.**
- **Pair 2 is CORRECTLY matched.** The **Sudarshan Setu**, inaugurated on February 25, 2024, connects Okha and Beyt Dwarka in Gujarat. **With a total length of 2,320 meters, it is recognized as India's longest cable-stayed bridge.**
- **Pair 3 is INCORRECTLY matched.** The Bandra-Worli Sea Link in Mumbai is a notable sea bridge, but it is not India's first. The **Pamban Bridge, which connects the Indian mainland with Rameswaram Island in Tamil Nadu, holds the distinction of being India's first sea bridge, having** been operational since 1914.

**Sources:** <https://english.gujaratsamachar.com/news/gujarat/rs-900-cr-sudarshan-setu-in-dwarka-ridden-with-potholes-just-5-months-after-inauguration>

**96) Answer: (c)**

**Difficulty Level: Hard**

**Micro Topic: Agriculture**

**Context:** Government is promoting organic farming for improving soil health and water retention through various schemes.

- **Statement 1 is CORRECT.** The **Paramparagat Krishi Vikas Yojana (PKVY) is a scheme implemented by the Government of India to promote organic farming across all states and Union Territories.** It aims to improve soil health and water retention through organic practices.
- **Statement 2 is CORRECT.** The **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) is a scheme exclusively implemented in the north-eastern states of India.** It focuses on supporting organic farming in these states



by providing end-to-end support to farmers, including production, processing, certification, and marketing.

- **Statement 3 is CORRECT. The National Centre for Organic and Natural Farming (NCONF) is the nodal organization for promoting organic farming under the Integrated Nutrient Management (INM) Division of the Department of Agriculture & Farmers Welfare.**

**Source:** <https://nconf.dac.gov.in/>

**97) Answer: (b) (Options 1, 2 and 3 are INCORRECT)**

**Difficulty Level: Hard**

**Micro Topic: Capital market**

- **Options 1, 2 and 3 are INCORRECT.** A non-financial asset is an asset that derives its value from its intrinsic physical characteristics rather than from a financial contract or ownership claim. These assets typically include real estate, machinery, land, intellectual property, and natural resources. It also includes patents, **trade secrets** and trademarks as well as other entities like **licenses**, rental agreement etc.
- Unlike financial assets, which represent a claim to future cash flows or ownership in a business (such as stocks, bonds, or bank deposits), non-financial assets are tangible or intangible items that hold value due to their inherent qualities or utility.
- **Option 4 is CORRECT.** Financial instruments are assets that can be traded or exchanged. Some examples of financial instruments include stock shares, **exchange-traded funds (ETFs)**, bonds, certificates of deposit (CDs), mutual funds, loans, and derivatives contracts.
- **Option 5 is CORRECT. Carbon credits are financial instruments** where the buyer pays another company to take some action to reduce its greenhouse gas emissions, and the buyer gets credit for the reduction.

**Source:** <https://hbr.org/2023/12/what-every-leader-needs-to-know-about-carbon-credits>

**98) Answer: (b) (Statements 1 and 2 are CORRECT)**

**Difficulty Level: Medium**

**Micro Topic: Money market instruments**

- **Statement 1 is CORRECT. Treasury Bills are short-term debt instruments** issued by the government to manage liquidity and meet short-term funding needs. They are typically issued for maturities of **91 days, 182 days, or 364 days**.
- **Statement 2 is CORRECT.** Treasury Bills are considered **risk-free** because they are backed by the government, ensuring no default risk.
- **Statement 3 is INCORRECT. Treasury Bills are issued at a discount and redeemed at face value, so there is no "interest"** in the traditional sense. However, the difference between the issue price and face value (discount earned) is treated as income and is taxable under Indian tax laws.

**Source:** <https://www.investopedia.com/terms/t/treasurybill.asp>



99) Answer: (d)

**Difficulty Level: Medium**

**Micro Topic: Inflation**

**Context:** Recent discussions on change of base year for WPI from 2011-12 to 2022-23

- **Statement 1 is CORRECT.** The Wholesale Price Index (WPI) is published monthly by the Office of the Economic Adviser, under the Ministry of Commerce and Industry. It serves as a key macroeconomic indicator to monitor inflation at the wholesale level and helps policymakers understand price trends across sectors.
- **Statement 2 is CORRECT.** The WPI currently uses 2011-12 as its base year for calculations. This base year ensures that price changes are compared against a relatively recent and stable economic period, making the index more relevant for contemporary analysis.
- **Statement 3 is CORRECT.** The WPI considers only the basic prices of goods and excludes transport and logistics charges. This approach ensures that the index reflects price changes purely at the producer or wholesale level, without being influenced by external factors such as transportation costs.

**Source:** <https://eaindustry.nic.in/>

100) Answer: (c)

**Difficulty Level: Medium**

**Micro Topic: Banking**

**Context:** Recent news article: “RBI cracks down on shadow banks over high-interest loans, rule violations”.

- **Option (c) is CORRECT.** Shadow banking refers to a system of financial intermediaries that conduct activities similar to traditional banks—such as lending, borrowing, and credit intermediation—but operate outside the framework of formal banking.
- Shadow banking is generally unregulated and not subject to the same kinds of risk, liquidity, and capital restrictions as traditional banks. While shadow banks can offer more flexible lending options, borrowers often face higher risks, such as higher interest rates, less transparency, and the possibility of less consumer protection. This lack of regulation makes transactions riskier compared to dealing with regulated financial institutions.

**Source:** <https://corpgov.law.harvard.edu/2024/09/25/shadow-banking-and-securities-law/>

**PTS 2025- COMPREHENSIVE TEST – 02: PAPER-1**

<b>Question</b>	<b>Micro topic</b>	<b>Difficulty level</b>
1	Election	Medium
2	Election commission	Easy
3	Parliament	Medium
4	Parliament	Hard
5	Scheduled and Tribal Areas	Easy
6	Constitutional bodies	Easy
7	Fundamental Rights	Hard
8	Fundamental Rights	Medium
9	Non- Constitutional Bodies	Medium
10	Parliament	Hard
11	Environmental conventions	Easy
12	Wildlife Protection Act	Easy
13	Fauna and flora	Easy
14	Fauna and Flora	Hard
15	Environmental conventions	Medium
16	Pollution	Hard
17	Environmental conventions	Hard
18	Fauna and flora	Hard
19	Alternative energy	Hard
20	Electric vehicles	Easy
21	Space science	Medium
22	Basic science	Hard
23	Genetic engineering	Medium
24	Artificial intelligence	Medium
25	Nuclear technology	Medium
26	Information technology	Hard
27	Terms in news	Hard
28	Space technology	Hard
29	Basic science	Medium
30	Terms in news	Hard
31	Biogeography	Medium
32	Climatology	Medium
33	Geomorphology	Medium
34	Mapping	Hard
35	Earth	Easy
36	Water bodies	Medium
37	Volcanoes	Hard
38	Current affairs	Hard
39	Earthquake	Medium
40	Geology of India	Hard
41	Map of India	Hard
42	Soils	Hard
43	Places in news	Hard
44	Art and culture	Hard
45	Places in news	Hard
46	Military exercise	Hard
47	Current affairs	Hard
48	Government Schemes	Hard
49	Defence technology	Hard
50	Current affairs	Hard
51	Philosophy of the constitution	Easy
52	Judiciary	Medium
53	Tribunals	Medium
54	Constitution	Medium
55	Union Executive	Medium
56	Pollution	Hard



57	Alternative energy	Hard
58	Species in news	Medium
59	Fauna and flora	Easy
60	Agriculture	Medium
61	Basic science	Medium
62	Biotechnology	Medium
63	Technology	Hard
64	Semiconductor	Hard
65	Terms in news	Hard
66	Banking	Hard
67	Banking	Medium
68	Inflation	Medium
69	Mineral resources	Hard
70	International agencies	Hard
71	Statutory bodies	Medium
72	Capital market	Medium
73	Financial market	Hard
74	Money supply	Medium
75	Infrastructure	Medium
76	Mauryan period	Easy
77	Buddhism	Hard
78	Vedic Period	Medium
79	Ancient kingdoms	Hard
80	Ancient kingdoms	Medium
81	Terms in ancient India	Medium
82	Jainism	Hard
83	Non-cooperation movement	Hard
84	Economic impact of British rule	Medium
85	Books and journals	Medium
86	Ghadar Movement	Easy
87	Viceroy	Easy
88	Socio- religious moments	Hard
89	Medieval architecture	Hard
90	Bhakti movement	Medium
91	Mughal period	Hard
92	Mughal period	Hard
93	Medieval literature	Hard
94	Mangroves	Medium
95	Infrastructure	Hard
96	Agriculture	Hard
97	Capital market	Hard
98	Money market instruments	Medium
99	Inflation	Medium
100	Banking	Medium

Difficulty Level	Number of Questions
Easy	13
Medium	39
Hard	48
<b>Total Questions</b>	<b>100</b>