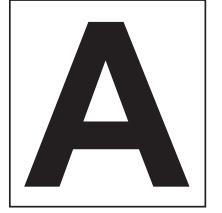


Test Code
01032325



अनुभव-2025

ALL INDIA OPEN MOCK TEST

GENERAL STUDIES PAPER-I

(23rd March, 2025)

Answer Key

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

DELHI CENTRE:

Vivekananda House: 6-B, Pusa Road, Metro Pillar no. 111, Near Karol Bagh Metro, New Delhi-110060 | Phone: 8081300200

Mukherjee Nagar: 1422, Main Mukherjee Nagar Road, Near Batra Cinema, New Delhi-110009 | Phone: 8081300200

BHOPAL CENTRE: Plot No. 46 Zone - 2, M.P Nagar, Bhopal - 462011 | Phone: 8827664612, 8081300200

JAIPUR CENTRE: Plot No. 6 & 7, 3rd Floor, Sree Gopal Nagar, Gopalpura Bypass, Jaipur - 302015 | Phone: 9358200511

PRAYAGRAJ CENTRE: IInd Floor 31/31, Sardar Patel Marg, Civil Lines Prayagraj, Uttar Pradesh-211001 | Ph. 9958857757

anubhav-2025

All India OPEN Mock Test-3 | GENERAL STUDIES PAPER-I
(23rd March, 2025)

1. (c)

- **Statement 1 is not correct:** Article 16 provides for equality of opportunity for all citizens in matters of employment or appointment **to any office under the State**. Accordingly, no citizen can be discriminated against or be ineligible **for any employment or office under the State** on grounds of only religion, race, caste, sex, descent, place of birth or residence. Fundamental right under Article 16 is available only against the State, and not against a private citizen. So, this provision **does not prohibit any private company** from discriminating on any of the grounds mentioned above. Thus, a private company refusing to hire a person on the basis of religion will not constitute violation of fundamental rights under the Constitution of India.
- **Statement 2 is correct:** Article 15(2) provides that **no citizen shall be subjected to any disability, liability, restriction** or condition on grounds only of religion, race, caste, sex, or place of birth with regard to (a) **access to shops, public restaurants, hotels and places of public entertainment**; or (b) the use of wells, tanks, bathing ghats, road and places of public resort maintained wholly or partly by State funds or dedicated to the use of general public. This provision **prohibits discrimination both by the State and private individuals**. Thus, a privately-owned restaurant refusing entry to a customer because they are transgender will constitute a violation of fundamental rights under Article 15(2).
- **Statement 3 is correct:** Article 25 says that all persons are equally entitled to freedom of conscience and the right to freely profess, practice and propagate

religion. The right to take out religious processions and to have peaceful religious gatherings in public places fall under the right to profess religion as guaranteed in article 25 (1). Moreover, this fundamental right is available to both citizens as well as foreigners. Thus, a **foreign religious preacher being prohibited from conducting a peaceful religious gathering** will be in violation of **fundamental right under Article 25(1)**.

- **Statement 4 is correct:** As explained above, **Article 16 prohibits discrimination on grounds of only religion, race, caste, sex, descent, place of birth or residence**. Thus, the Parliament passing a law reserving certain state government jobs exclusively for individuals born in that state will involve a violation of the fundamental right under Article 16.
 - It is to be noted that as an **exception to the general rule of equality of opportunity in public employment as provided under Article 16**, the Constitution allows the Parliament to prescribe **residence as a condition for certain employment or appointment in a state or union territory** or local authority or other authority. But, being a resident of a state is different from being born in a state. While the first one is allowed as a condition for public employment (if Parliamentary law provides so), the second one is not.

2. (b)

- **Statement I is correct:** The Governor of a state acts as the chancellor of universities in the state. He also appoints the vice-chancellors of universities in the state. While as Governor he generally

functions with the aid and advice of the Council of Ministers, as Chancellor he acts independently of the Council of Ministers and takes his **own decisions on all University matters.**

- **Statement II is correct:** State public universities are established through laws passed by state legislatures. It is these laws that designate the concerned Governor as the Chancellor of state universities. Thus, **the Governor's role as ex-officio chancellor of state universities is not envisaged under the Constitution of India, but under the concerned state legislations.**
 - **Statement III is correct:** The constitutional position of the governor differs from that of the president in the following two respects:
 1. While the Constitution envisages the possibility of the governor acting at times in his discretion, no such possibility has been envisaged for the President.
 2. After the **42nd Constitutional Amendment (1976), ministerial advice** has been made **binding on the President**, but **no such provision** has been made **with respect to the governor.**
 - **Only Statement II provides the correct explanation for Statement I:** It is because the Governor's role as Chancellor is a statutory one, and not a constitutional role, that the Governor is allowed discretion in University matters.
3. (a)
- **Context:** Recently, the Supreme Court has advocated for application of the PoSH Act to political parties.
 - **About Prevention of Sexual Harassment at workplace (PoSH) Act, 2013:** PoSH Act, 2013 provides for protection against sexual harassment of women at workplace and for prevention and redressal of complaints of sexual harassment and for matters connected therewith or incidental thereto.
4. (c)
- **1 is not correct:** The PoSH Act specifically covers women and does not extend protection to transgender individuals.
 - **2 is correct:** The Act applies to women at all workplaces, regardless of size. In cases where an organization has fewer than 10 employees, complaints are handled by the Local Complaints Committee (LCC) set up by the district administration instead of an Internal Complaints Committee (ICC).
 - **3 is correct:** As per the Act, an aggrieved woman in relation to a workplace means a woman, of any age **whether employed or not**, who alleges to have been subjected to any act of sexual harassment by the respondent. Thus, even a woman client or visitor who is sexually harassed at an office she does not work in gets the protection under the Act.
 - **4 is not correct:** As explained above, the PoSH Act specifically covers women. Hence, protection under it is not extended to male individuals.
- **Statement 1 is correct:** As per **Article 224(1)**, if by reason of any temporary increase in the business of a **High Court** or by reason of **arrears of work** therein, it appears to the President that the number of the Judges of that Court should be for the time being increased, **the President may**, in consultation with the National Judicial Appointments Commission, **appoint** duly qualified persons to be **additional Judges of the Court** for such period not exceeding two years as he may specify.
 - **Statement 2 is not correct:** As per **Article 224(2)**, when any **Judge of a High Court other than the Chief Justice** is by reason of absence or for any other reason **unable to perform the duties** of his office or is appointed to act temporarily as Chief Justice, **the President may**, in consultation with the National Judicial Appointments Commission, **appoint a duly qualified person to act as a Judge of that Court** until the permanent

Judge has resumed his duties. Thus, acting judges of a High Court are appointed by the President, not the Chief Justice of India.

- **Statement 3 is correct:** As per **Article 224A**, at any time, the **chief justice of a high court** of a state **can request a retired judge** of that high court or any other high court to act as a judge of the high court of that state for a temporary period. He can do so only with the previous consent of the President and also of the person to be so appointed.

5. (d)

- **1 is correct:** The Finance Accounts of the Union Government is an annual financial statement that provides a comprehensive record of the government's receipts, expenditures, assets, and liabilities for a financial year. The Appropriation Accounts is an annual financial document that presents a comparison between the actual expenditure incurred by the Union Government and the amounts authorized by Parliament through the Appropriation Act during a financial year. The **CAG examines and certifies both these accounts of the Union government.**
- **2 is correct:** The **duties of the CAG in relation to states include:** (a) compiling the accounts of all States except the State of Goa (b) keeping such accounts in relation to compilation of accounts of the States as may be necessary (c) **preparing the Appropriation Accounts and Finance Accounts thereof.**
 - It is to be noted that earlier the CAG used to compile and maintain the accounts of the Union government as well. However, in 1976, he was relieved of his responsibilities with regard to the compilation and maintenance of accounts of the Central Government due to the separation of accounts from audit, that is, departmentalisation of accounts.
- **3 is correct:** The duties of the CAG include auditing all trading, manufacturing, profit

and loss accounts and balance-sheets and other subsidiary accounts kept in any department of the Union or of a State; and in each case reporting on the expenditure, transactions or accounts so audited by him.

6. (b)

- **Statement 1 is not correct:** A sitting Rajya Sabha member can contest Lok Sabha elections without resigning his/her seat in the Rajya Sabha. It is only after he/she wins the Lok Sabha seat, he/she must vacate the Rajya Sabha seat.
- **Statement 2 is correct:** As per the Representation of People Act (1951), if a sitting member of one House is also elected to the other House, his seat in the first House becomes vacant. Thus, if a Lok Sabha member is elected to Rajya Sabha, his/her seat in the Lok Sabha becomes vacant.
- **Statement 3 is correct:** As per the Representation of People Act (1951), a person cannot be a member of both the Parliament and the state legislature at the same time. If a person is so elected, his seat in Parliament becomes vacant if he does not resign his seat in the state legislature within 14 days.
- **Statement 4 is not correct:** A House can declare the seat of a member vacant if he is absent from all its meetings for a period of sixty days without its permission. However, it is **not automatic**. Even if an MP is absent for more than 60 days, the House has to "declare" the seat vacant, meaning the matter has to be put to vote.
- **Statement 5 is correct:** As explained above, a House can declare the seat of a member vacant only if he is absent without its permission. However, if the MP is absent from the meetings of the House with its permission (i.e. with leaves granted), his/her seat is not liable to be declared vacant. In practice, leave requests are rarely denied. And being in jail while proceedings are ongoing is grounds for asking for leave.

7. (c)

- **Statement 1 is correct:** As per the **Gram Nyayalayas Act, 2008, Gram Nyayalayas are to be established for every Panchayat at intermediate level** or a group of contiguous Panchayats at intermediate level or for a group of contiguous Gram Panchayats.
- **Statement 2 is correct:** Under of the Gram Nyayalayas Act, 2008, it is for the State Governments to establish Gram Nyayalayas in consultation with the respective High Courts.
- **Statement 3 is correct:** As per the Act, the **Gram Nyayalaya shall try to settle the disputes as far as possible by bringing about conciliation** between the parties and for this purpose, it shall make use of the conciliators to be appointed for this purpose.

8. (c)

- **Statement 1 is correct:** When the rupee depreciates, foreign investors' assets in India become less valuable in their home currency. This increases the risk of capital loss, prompting them to withdraw their investments.
- **Statement 2 is correct:** When FPIs withdraw capital from India, they sell the bonds. It leads to a decrease in the demand for Indian bonds and hence a fall in bond prices. Since, the bond yield is inversely related to bond price, the bond yields increase.
- **Statement 3 is correct:** A contractionary monetary policy (e.g., raising interest rates) can make Indian assets more attractive to foreign investors by offering higher returns. This can help reduce FPI outflows.

9. (a)

- **Statement 1 is correct:** When small savings schemes (like post office deposits, PPF, etc.) offer higher interest rates than bank deposits, individuals are incentivized to invest in these schemes rather than bank deposits. This directly contributes to sluggish deposit growth in banks.

- **Statement 2 is correct:** With the increasing accessibility and attractiveness of capital markets (stocks, mutual funds, etc.), individuals are allocating a larger portion of their savings to these investments instead of traditional bank deposits. This trend has been one of the prominent factor, reducing the inflow of deposits into banks in the recent times.
- **Statement 3 is not correct:** A decrease in the CRR by the RBI increases the amount of money banks have available for lending. But, it does not directly impact the rate of growth of deposits in the banks.

10. (b)

- **Statement 1 is not correct:** India is the world's second largest producer of Man-Made Fibers (MMF). The real issue is not the lack of MMF production, but lack of export competitiveness in comparison to countries like China and Vietnam due to higher production cost. Some important reasons for higher production costs are higher logistics cost, fragmented supply chain, poor technology, etc. In the MMF sector, high material cost is also a concern. As per Confederation of Indian Textile Industry, polyester fibre in India is 33-36% costlier than in China, while viscose fibre was 14-16% more expensive.
- **Statement 2 is correct:** The fragmented nature of India's textile sector, with a large number of small-scale units, often leads to inefficiencies, higher production costs, and limited economies of scale, making it less competitive in the global market. In fact, this is one of the primary reasons that India is not able to fully capitalize on its textile export potential.

11. (b)

Answer: B

- **About Tax Buoyancy:** Tax Buoyancy is a measure of responsiveness of tax revenue growth to changes in GDP. It is expressed as a ratio of change in tax revenue in relation to change in

gross domestic product or GDP of an economy.

Tax Buoyancy = Percentage Change in GDP/Percentage Change in Tax Revenue

- **Statement-I is correct:** When GDP increases, tax buoyancy may improve through several mechanisms: First, economic expansion typically leads to higher incomes, increased corporate profits, and greater consumption, all of which broaden the tax base. Second, GDP growth often accompanies formalization of the economy, bringing more economic activity into the tax net. Third, progressive tax structures mean that as incomes rise disproportionately in higher tax brackets, revenue may grow faster than GDP.
 - However, this relationship is not automatic. Tax buoyancy depends on multiple factors beyond GDP growth, including tax policy changes (like rate reductions or new exemptions), administrative efficiency in tax collection, and the composition of GDP growth (whether it occurs in heavily taxed or exempted sectors). Therefore, while GDP growth creates conditions that can enhance tax buoyancy, it does not guarantee such improvement.
- **Statement-II is correct:** As explained above, Tax buoyancy represents the ratio of percentage change in tax revenue to percentage change in GDP.
- **Statement-II is not the correct explanation for Statement-I:** Statement-II defines tax buoyancy but does not explain Statement-I. Statement-I is a broader claim about the relationship between GDP growth and tax buoyancy, which is not always true (since tax buoyancy also depends on other factors like tax compliance, policy changes, etc.). Thus, Statement-II is not the correct explanation for Statement-I.

12. (a)

- **Statement 1 is correct:** India is the largest producer (25% of global production), consumer (27% of world consumption) and importer (14%) of pulses in the world.
- **Statement 2 is correct:** Price Support Scheme (PSS) is a component of the umbrella scheme of PM Annadata Aaye Sanrakshan Abhiyan (PM-AASHA). Under Price Support Scheme, procurement of pulses, oilseeds and copra is done at MSP declared by the government. The procurement under the scheme done in consultation with the concerned State Government as and when market price of these produce fall below the MSP.
- **Statement 3 is not correct:** The government's recent policy adjustments have been mixed. For instance, a 10% import duty was imposed on lentils (masur), while duty-free imports of yellow peas were extended until May 31, 2025. These measures aim to balance domestic availability and support farmers, rather than uniformly increasing import duties on all major pulses.

13. (b)

- **About Money Multiplier:** The money multiplier, or monetary multiplier, measures the maximum amount of money that a banking system can generate with a given base amount of reserve money (or high-powered money). It shows how an initial deposit in a bank can lead to a greater increase in the total money supply through the process of credit creation.
- **Statement 1 is not correct:** When the RBI injects new currency into the economy, it increases the Monetary Base (also known as high-powered money). However, this action does not directly increase the Money Multiplier. Money Multiplier measures how much the total money supply increases for each unit of monetary base injected by the central bank. It reflects how efficiently banks create money through lending. The Money Multiplier is primarily influenced

by factors like the Cash Reserve Ratio (CRR) and the public's preference for holding cash versus deposits.

- **Statement 2 is correct:** CRR (Cash Reserve Ratio) is the portion of deposits that banks must keep with the RBI. Reducing CRR means banks have more funds to lend, leading to higher credit creation and a higher Money Multiplier. However, any change in CRR does not change the value of Monetary Base, as it does not involve RBI injecting or withdrawing currency in the system.
- **Statement 3 is correct:** The Money Supply is the product of the Monetary Base and the Money Multiplier. Therefore, if the Money Multiplier increases while the Monetary Base remains constant, the Money Supply will expand.

14. (c)

- **About Exchange-Trade Funds (ETFs):** An Exchange-Traded Fund (ETF) is a type of mutual fund whose units are traded on stock exchanges like shares. Like any other type of mutual fund, the investors' money is pooled into a corpus that is invested in various securities to meet a defined investment objective.
- **About Index Funds:** An index fund is a type of mutual or exchange-traded fund (ETF) that tracks the performance of a market index, such as the S&P 500, by holding the same stocks or bonds or a representative sample of them.
- **Option (c) is the correct answer:** Index Funds are priced once daily after the market closes, and investors buy or sell shares directly from the fund company. In contrast, ETFs are more akin to equities than to mutual funds, and can be bought and sold like stock shares throughout the trading day, with prices fluctuating constantly.

15. (c)

- **Context:** Recently, The Union Cabinet chaired by the Prime Minister has approved the development of **Next Generation**

Launch Vehicle (NGLV), that will be a significant step towards the Government's vision of establishing & operating the Bharatiya Antariksh Station and towards developing capability for Indian Crewed Landing on the Moon by 2040.

- **Statement 1 is correct:** NGLV will have **3 times the present payload capability** of LVM3 (so, obviously more than PSLV) with 1.5 times the cost compared to LVM3. It will also have **reusability** resulting in **low-cost access to space** and modular green propulsion systems.
- **Statement 2 is not correct:** Unlike PSLV and LVM3, it is designed to have a reusable **first stage**. It will not be a fully usable rocket.
- **Statement 3 is correct:** ISRO is **developing** a 2000 kN thrust **semi-cryogenic engine** working on an **LOX Kerosene propellant** combination. It will be used in NGLV and also for enhancing payload capabilities of LVM3 in future. Currently, neither PSLV nor LVM3 has semi-cryogenic engine.

16. (d)

- **Option (d) is correct: Proof of work (PoW)** is a decentralized consensus mechanism that requires network members to expend effort in solving an encryption puzzle. Proof of work is also called mining, in reference to receiving a reward for work done. Proof of work allows for secure peer-to-peer transaction processing without needing a trusted third party. Proof of work at scale requires vast amounts of energy, which only increases as more miners join the network.
- While PoW mechanisms require miners to solve cryptographic puzzles, PoS mechanisms require validators to hold and stake tokens for the privilege of earning transaction fees.
- **Proof-of-stake (POS)** is seen as less risky regarding the potential for an attack on the network, as it structures compensation in a way that makes an attack less advantageous.

- Both PoW and PoS are used to achieve consensus and validate transactions in a decentralized manner.

17. (a)

- **Statement I is correct:** OPV is administered orally and contains a live-attenuated (weakened) poliovirus. OPV generally provides stronger mucosal immunity, which is crucial for preventing the spread of the virus. However, because OPV uses a live-attenuated virus, there's a risk of it mutating and causing VDPV.
- **Statement II is correct:** OPV (Oral Polio Vaccine) contains a live but weakened poliovirus, whereas IPV (Inactivated Polio Vaccine) contains a killed (inactivated) virus
- **Statement-II is the correct explanation for Statement-I:** The fact that OPV contains a live-attenuated virus is precisely why it can induce stronger immunity (because it mimics a natural infection) but also carries the risk of VDPV (because the live virus can mutate).

18. (a)

- **1 is correct:** A **supernova** is a powerful stellar explosion that **occurs at the end of a massive star's life**. The **Sun** is a medium-sized star, **not massive enough to undergo a supernova**.
- **2 is not correct:** This is the **eventual stage of the Sun's life**. After it exhausts its nuclear fuel and sheds its outer layers as a planetary nebula, **it will become a white dwarf**.
- **3 is not correct:** The **Sun will become a red giant** before it transforms into a white dwarf. As it ages, it will expand and cool, becoming a red giant.
- **4 is correct:** Black holes form from the collapse of massive stars. The **Sun's mass is far too small to create a black hole**.

19. (a)

- **Statement 1 is correct:** Heritable human genome editing is considered as **making changes to the genetic material of**

eggs, sperm, or any cells that lead to their development, including the cells of early embryos, and establishing a pregnancy - raises not only scientific and medical considerations but also a host of ethical, moral, and societal issues.

- **Statement 2 is not correct:** Maternal Spindle Transfer is a technique used to avoid the transmission of mitochondrial diseases. It is **not a technique that edits the Genome**. It is a technique that replaces the mothers mitochondria. Gene editing uses techniques like CRISPR.
- **Statement 3 is not correct:** Heritable human genome editing is not widely used. In fact, it's highly controversial and largely prohibited due to ethical concerns and safety risks. Human embryos whose genomes have been edited should not be used to create a pregnancy until it is established that precise genomic changes can be made reliably and without introducing undesired changes.

20. (a)

Statement 1 is correct: Researchers can manipulate the interaction between photons and atoms in a medium to slow down and effectively trap light. This involves creating a state where the light's energy is transferred to the atoms, essentially "freezing" it.

Statement 2 is not correct: While some experiments utilize ultra-cold atoms, such as Bose-Einstein condensates, to reduce thermal noise, similar techniques have also been implemented at room temperature in systems like warm atomic vapors or solid-state materials, including doped crystals.

21. (b)

Option (b) is correct: When water evaporates, it transitions from a liquid to a gaseous state (water vapor). This phase change requires energy, known as the latent heat of vaporization. The water on the wet cloth draws this latent heat from its surroundings, which includes your skin. As your skin loses this heat, it feels colder.

Option (a) is not correct: While water does conduct heat better than dry cloth, this is a minor effect compared to the evaporative cooling.

Option (c) is not correct: Conduction plays a very small role in this process. Evaporation is the primary driver of the cooling sensation.

Option (d) is not correct: Wet cloth actually increases the sensation of cold due to evaporation, not reduces sensitivity.

22 (b)

Option B is correct.

- **Site 1, Muziris:** It was an important ancient port city located on the Malabar Coast of present-day Kerala. It was a major center of trade, especially with the Roman Empire. It was the foremost port in the Chera kingdom
- **Site 2, Burzahom:** Located in present-day Kashmir, It is a famous Neolithic site. It features pit dwellings, stone tools, and early evidence of agriculture.
- **Site 3, Junagarh (Gujarat):** The Junagarh rock inscription (also known as the Girnar inscription) was issued by the Saka ruler Rudradaman I. It states that he twice defeated Sata-karni, lord of the Dakshinapatha, but did not destroy him since he was a close relative. It states that construction of Sudarshana lake was begun during the time of Chandragupta Maurya and completed during Ashoka's reign.

23. (b)

- **Statement 1 is correct:** The Quit India Movement was launched by Mahatma Gandhi on **8th August 1942**, after the failure of the **Cripps Mission (March 1942)**.
 - The Quit India Movement was one of the last major uprisings against the British government before the fort started to crumble. It was launched against the background of the Second World War, the support and cooperation of India, the "August Offer" by Lord Linlithgow, and finally the **Cripps Mission**.

- The terms of offering a Dominion status to India after the conclusion of the War, or seceding from the Commonwealth was unacceptable, and negotiations broke down.
- Gandhi had later issued a statement in April, stating that the Cripps proposal of a Dominion Status was a "post-dated cheque on a failing bank".
- After a series of extreme political tension and build-up, the **Quit India Movement** was launched on August 8th, 1942 at Bombay's Gwalior Tank Maidan following Gandhi's famous "Do or Die" speech, wherein he demanded the exit of the British from India.
- **Statement 2 is correct:** Leaders like **Rammanohar Lohia, Jayaprakash Narayan, and Usha Mehta** played a crucial role in **underground resistance** after the main Congress leadership was arrested. They coordinated secret radio broadcasts, mobilized workers, and carried out sabotage activities to keep the movement alive.
 - JP actively worked underground for the Indian Freedom Movement in this period. For fighting the tyranny of British rule, he organised an "**Azaad Dasta**" (freedom brigade) in Nepal.
- **Statement 3 is NOT correct:** Jatiya Sarkar was an independent parallel government in Tamluk, not Satara (In Satara, it was Prati Sarkar). This government lasted for two years till August 31, 1944. Tamluk is now a part of the Purba Medinipur district of the state of West Bengal. The three people who played a pivotal role in the formation of the Tamralipta Jatiya Sarkar were Ajoy Kumar Mukherjee, Satis Chandra Samanta, and Sushil Kumar Dhar. The parallel government in Midnapur had established several alternate centers of power in the form of police stations, military departments, courts, and revenue collection mechanisms. An important development that occurred during this

time in the Tamluk subdivision was the publishing of the Bengali publication, *Biplabi*, the journal of Civil Rebellion. The weekly journal elaborated on the several anti-British Congress-led activities during the period.

24. (d)

- **Significant details of district-level administration in Bengal are reflected in the Damodarpur copper plates dated in Gupta year 124 during the reign of Kumaragupta I.** These record orders regarding certain land transactions issued to village officials by the adhikarana of Kotivarsha vishaya. The adhishtana adhikarana of Kotivarsha had five members—
 - Uparika or vishayapati (who was the head),
 - Nagara-sreshthin (Head of city merchant)
 - Sarthavaha (chief caravan trader),
 - Prathama-kulika (chief artisan or merchant),
 - Prathama-kayastha (chief scribe or an officer in charge of revenue collection).
- This indicates that the vishayapati was assisted in his administrative duties by certain prominent members of the town.

25. (b)

- **Option (b) is correct:** Bhavabhuti was a renowned Sanskrit dramatist and poet of ancient India. He authored the famous “*Uttararamacharita*,” which depicts the later life of Lord Rama, including his separation from Sita and their eventual reunion. In Bhavabhuti’s *Uttararamacharitam*, a lot of exaggeration (Atishyokti) has been used while presenting Sita as an ideal character. Bhavabhuti’s Sita is an embodiment of idealism.
- He also wrote “*Malatimadhava*” and “*Mahaviracharita*.”
- Bhavabhuti served as a **court poet under King Yashovarman of Kannauj** (8th century CE).

26. (a)

- **Statement 1 is correct:** The INA trials were conducted by a **British military court** at the Red Fort in Delhi.
- **Statement 2 is correct:** **Jawaharlal Nehru**, along with other prominent lawyers like Bhulabhai Desai, Tej Bahadur Sapru, and Kailash Nath Katju, formed the **defense team** for the INA officers.
- **Statement 3 is not correct:** In response to the nationwide unrest following the INA trials, the British government put forward the **Cabinet Mission** (not the Wavell Plan). The Wavell plan was proposed in June 1945, whereas INA trials started after that.
 - Three officers (Colonel Prem Sahgal, Colonel Gurbaksh Singh Dhillon, and Major-General Shah Nawaz Khan) were set free and they were received outside by lakhs of people thronging the streets and shouting slogans. The situation was looking very explosive, and the British now tried to resolve it by putting forward the idea of transfer of power to the Indians by quickly sending the **Cabinet Mission** to decide the modalities.

27. (a)

- **1 is correctly matched:** Dhamek Stupa is the most noticeable structure in **Sarnath, near Varanasi**. It is one of the most prominent Buddhist structures in India. The Dhamek Stupa was built in 500 CE to replace an earlier structure commissioned by the great Mauryan king Ashoka in 249 BCE. The Dhamek Stupa represents the deer park (Rishipattana). This park is said to be of great importance as **Buddha gave his first sermon here after attaining enlightenment**, to his disciples that revealed his “Eightfold Path”.
- **2 is NOT correctly matched:** **Ramabhar Stupa** is located in **Kushinagar, Uttar Pradesh** (not Bodhgaya). This stupa, situated near a pond called **Ramabhar**, perhaps represents the site of the cremation

of **Lord Buddha**. The Buddhist traditions refer to this stupa as **Mukutabandhana Chaitya**. It was **excavated in 1910 A.D.**, revealing remains of a brick floor and corners of walls in the center, along with a part of a circular drum, which was finally exposed in **1956 A.D.**

- **3 is NOT correctly matched:** The Bharhut Stupa is located in **Satna, Madhya Pradesh**. It is famous for its elaborate Buddhist sculptures but is not the birthplace of Lord Buddha. **Lumbini (Nepal) is the actual**

28. (b)

- **Option (b) is correct:** The Greenwich Meridian is not the first prime meridian. There were others in the past. In fact, many centuries before Europe, India had a prime meridian of its own. It was called **madhya rekha** (or ‘middle line’) and passed through the city of Ujjayini (today **Ujjain**), which was a reputed centre for astronomy over many centuries.
- Varahamihira, a famous astronomer, lived and worked there some 1,500 years ago. Indian astronomers were aware of the concepts of latitude and longitude, including the need for a zero or prime meridian. The Ujjayini meridian became a reference for calculations in all Indian astronomical texts.

29. (c)

- **Statement 1 is correct:** Plastic is a **synthetic polymer made from natural gas and petroleum**. Nearly all the plastics are made from **chemicals sourced from fossil fuels-based petrochemicals**.
- **Statement 2 is not correct:** Although PVC is technically recyclable, presently, it is among the **least recycled plastics**. Melamine is a **thermosetting plastic**, meaning it can only be moulded or shaped once. Thus, it is **difficult to recycle Melamine**. On the other hand, Polyethylene Terephthalate (PET) and High Density Polyethylene (HDPE) are one of the **most recyclable plastics**.

- **Statement 3 is not correct:** The **Plastic Waste Management Amendment Rules, 2021**, prohibit the **manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than thickness of 120 microns**. This is because carry bags with less micron size are **usually used once** and have high littering potential and **low recyclability**. Additionally, thicker carry bags are relatively **difficult for animals to swallow**.
- **Statement 4 is correct:** The **Plastic Waste Management Amendment Rules, 2021** mandate **Extended Producer Responsibility** of that plastic packaging waste, which is not covered under the phase out of identified single use plastic items. According to the Rules, the **Producer, Importer and Brand owner (PIBO)** are **responsible for collection and management of the plastic packaging waste in an environmentally sustainable way**.

30. (*)

- The question has been dropped due to a typographical error in option (b). Option (b) was intended to be “3” only. The statement-wise accuracy of the question is as follows:
- **Statement 1 is not correct:** **India is home to two species of freshwater dolphins: the Ganges river dolphin and the Indus river dolphin**. Additionally, Irrawaddy dolphins are also found in India which majorly inhabit the brackish waters near Chilika lake.
- **Statement 2 is not correct:** The **Gangetic dolphins** are mainly found in river **Ganga, Brahmaputra and their tributaries, but not in river Beas**. (Beas river has Indus river dolphins, not Gangetic)
- **Statement 3 is correct:** The **Ganges river dolphin** can only live in freshwater and is **practically blind**. They **hunt by emitting ultrasonic sounds**, which bounces off of fish and other prey, enabling them to “see” an image in their mind.

- **Statement 4 is not correct:** According to the survey, the **maximum** number of dolphins were reported in **Uttar Pradesh**, followed by Bihar, West Bengal, and Assam.

31. (d)

- **About Diel Vertical Migration:** It refers to the **synchronized daily movement of marine organisms** like zooplankton and small fishes **from the bottom layers of Ocean waters up to the topmost layer.**
- **A is false:** **Giant Oarfish and Anglerfish** are **deep sea dwelling creatures** that are rarely sighted near the Ocean surface. These fishes are **not known to undergo diel vertical migration.** Scientists link their strange appearance to **climate change, sonar interference and alterations in oceanic conditions.** Disruptions caused due to rising ocean temperatures and pollution could also be the possible factors behind forcing these species into unfamiliar territories.
- **R is true:** Diel Vertical Migration patterns are primarily **driven by the need to find food and avoid predators.** These organisms **ascend to the upper layers at night to feed in the nutrient-rich surface waters** provided by phytoplankton and descend back during the daytime to evade predators such as large fishes and other marine creatures.

32. (c)

- **Statement 1 is not correct:** The **polar vortex** is a **large area of low-pressure and cold air** that **rotates around** both of the Earth's **polar regions.** There are **two types** of polar vortex: **tropospheric and stratospheric.** The tropospheric polar vortex extends from the surface up to about 10 km to 15 km. The stratospheric polar vortex occurs at around 15 km to 50 km high.

- **Statement 2 is correct:** The **Polar Night Jet Stream (PNJS)** is a **strong west-to-east jet stream** that forms the edge of the Polar Vortex. When the polar vortex is strong and stable, it keeps the PNJS travelling around the planet in a circular path. During a **weak polar vortex**, the **PNJS does not have enough force to maintain its usual path.** When high-pressure systems get in its way, a collection of **cold air pushes southwards** (in Northern Hemisphere), along with the rest of the polar vortex system. This **causes extreme cold** and winter storms in the affected areas.
- **Statement 3 is not correct:** Polar vortex is a major factor that plays a role in the ozone depletion process. During a **weak polar vortex**, the **temperatures are higher** and **winds are slower** than usual in the stratosphere. These lead to **slowing down of the ozone depletion process.**

33. (c)

- **About Phytoplankton:** They are **microscopic organisms** that **live in aquatic habitats**, both salty and fresh water. Common kinds of phytoplankton include **cyanobacteria, diatoms, dinoflagellates** etc. Like terrestrial plants, phytoplankton **have chlorophyll to capture sunlight**, and convert it into chemical energy through the process of **photosynthesis.**
- **Statement 1 is correct:** **Diatoms** are **unicellular algae** whose cellular material is contained inside a shell made of silica. Being phytoplankton, they are the **primary producers in the aquatic ecosystem.** They have one of the highest-known photosynthetic efficiencies.
- **Statement 2 is correct:** Through carbon fixation, **diatoms remove significant amounts of carbon dioxide (CO₂)** from the atmosphere. This CO₂ is converted to organic carbon in the form of sugar, and oxygen (O₂) is released. The **O₂ so released contributes to around 20 to 30% of the global output.**

- **Statement 3 is not correct:** Though **Diatoms** themselves do not fix Nitrogen, they have the ability to **form a symbiotic relationship with Rhizobium bacteria**. Such association of Diatoms and Rhizobium contribute towards **Nitrogen fixation** in the vast regions of the ocean.

34. (d)

- **Context:** The **International Big Cat Alliance (IBCA)** has officially come into force in January 2025. It is a treaty based **inter-governmental international organization** with headquarters in India. It was launched with the **aim of conservation of seven Big Cats - Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma**.
- **Statement 1 is not correct:** Amongst the Big Cats, **Lion is a truly social animal** that usually **lives in groups** of 15 or more Lions called '**Prides**'. While the females usually live with the Pride for life, the males often stay for only two to four years.
- **Statement 2 is not correct:** Snow Leopards are usually smaller than the other Big Cat species. **Tigers are the largest among the Big Cats**. Specifically, the Siberian tiger (Amur tiger) is the largest among all the species.
- **Statement 3 is not correct:** **White tigers are not a separate subspecies of tiger**. The color of the white tiger's fur is the **result of a rare genetic mutation called Leucism**. Such mutation may occur **due to inbreeding** among tigers having the recessive genes.

35. (c)

- **About artificial reefs:** They are **humanmade structures that mimic some of the characteristics of a natural reef**. Common forms of artificial reefs include **submerged shipwrecks, oil and gas platforms, bridges, lighthouses**, etc.
- **Statement 1 is correct:** They are strategically placed in areas where natural habitats have been lost or degraded. In such areas, they **provide a fresh habitat**

to a wide variety of **marine life**, enhance biodiversity and **support the food chain**. In this way, they promote ecosystem recovery and help **restore ecological carrying capacity** in underwater areas.

- **Statement 2 is correct:** Artificial reefs **promote the growth of seaweeds, seagrasses and marine plants**. As these photosynthesize, they **absorb excess carbon dioxide** from the surrounding water and release oxygen, thereby helping to **combat ocean acidification**.

36. (b)

- **Pair 1 is not correctly matched:** Recently, Pakistan carried out an airstrike in **Paktika province in eastern Afghanistan**. India condemned this airstrike by Pakistan.
- **Pair 2 is not correctly matched:** **Tigray** is a region in **Ethiopia**. It has been in the news due to the ongoing civil war between the Ethiopian government and the Tigray People's Liberation Front (TPLF).
- **Pair 3 is correctly matched:** Recently, the Balochistan Liberation Army (BLA) terrorists ambushed a train carrying over 400 passengers in the **Bolan area of Balochistan (Pakistan)** and held the passengers hostage. Bolān Pass is an important natural gateway in Balochistān province, Pakistan, and has been a route for traders, invaders, and nomadic tribes between India and higher Asia.
- **Pair 4 is correctly matched:** The **Golan Heights** is a rocky plateau in southwestern **Syria**. It has been in the news due to Israel-Syria conflicts.

37. (d)

- **Option (d) is the correct answer:** Food and Consumer Affairs Minister Pralhad Joshi recently unveiled '**Anna Chakra**', a groundbreaking **supply chain optimisation tool for the Public Distribution System (PDS)**.
- Developed in partnership with the World Food Programme and IIT-Delhi, the system leverages advanced algorithms to optimise foodgrain movement across the country's logistics network.

38. (c)

- **Context:** Recently, the **criteria for bestowing classical status was revised** by the Linguistics Experts Committee, chaired by the Sahitya Akademi. Thereafter, the Union Cabinet approved **classical language status to Marathi, Bengali, Assamese, Pali, and Prakrit.**
- **Statement 1 is correct:** As explained above, both **Pali and Prakrit have been accorded the status of Classical Language** recently.
- **Statement 2 is not correct:** In 2004, the Government of India, for the first time, created a new category of languages known as **Classical Languages** and set the criteria for the status of Classical Language. This criterion was revised in 2005 and 2024 based on the recommendations of Linguistic Experts Committees (LEC) under Sahitya Akademi to examine the proposed languages for the status of Classical Language.
 - **The criteria, as revised in 2024, is as follows:**
 - High antiquity of its early texts/recorded history over a period of 1500-2000 years.
 - A body of ancient literature/texts, which is considered a heritage by generations of speakers.
 - Knowledge texts, especially prose texts in addition to poetry, epigraphical and inscriptional evidence.
 - The Classical Languages and literature could be distinct from its current form or could be discontinuous with later forms of its offshoots.
 - The **earlier criteria**, as revised in 2005, included - “The **literary tradition must be original and not borrowed** from another speech community”. However, it has been **dropped in the current criteria** as revised in 2024.
- **Statement 3 is not correct:** The **Linguistics Expert Committee**, which

revised the criteria for the Classical Language status, comprises representatives of the Union Ministries of Home, Culture and four or five linguistic experts at any given time. It is **chaired by the President of the Sahitya Akademi.**

39. (b)

- **Context:** The National Education Policy (NEP) 2020 has been in the debate over the three-language formula, particularly between the Centre and Tamil Nadu.
- **About three-language formula:** As per the NEP 2020, there will be greater flexibility, and no language will be imposed on any state. The three languages learned by children will be the choices of states, regions, and, of course, the students themselves, so long as at least two of the three languages are native to India. Thus, the only condition regarding the three languages in the NEP 2020 is that at least two of the three languages are native to India.
 - Moreover, the NEP 2020 states that foreign languages, such as Korean, Japanese, Thai, French, German, Spanish, Portuguese, and Russian, will also be offered at the secondary level.
- **1 is correct:** A student of Tamil Nadu can choose Hindi, Sanskrit and Japanese as the combination contains two languages - Hindi and Sanskrit - which are native to India.
- **2 is not correct:** A student of Uttar Pradesh cannot choose Hindi, English and Korean as the combination contains two languages - English and Korean - which are non-native to India.
- **3 is correct:** A student of Gujarat can choose Hindi, Punjabi and Thai as the combination contains two languages - Hindi and Punjabi - which are native to India.
- **Additional information:**
 - The genesis of the three-language formula lies in the recommendations of the University Education Commission

of 1948-49, which was chaired by Dr Sarvepalli Radhakrishnan.

- The formula was first proposed by the Education Commission (1964-66), officially known as the Kothari Commission.
- It was formally adopted in the National Policy on Education (NPE) 1968 under then Prime Minister Indira Gandhi. The policy was reaffirmed in NPE 1986 under PM Rajiv Gandhi and revised in 1992 by Narasimha Rao's Congress government to promote linguistic diversity and national unity.

40. (c)

- **Context:** Recently, Khaar Bhawani Mela was held in Jammu and Kashmir.
- **Option (c) is the correct answer:** Every year, a mela or festival is held at Mata Kheerbhawani temple at Tulmulla in central Kashmir's Ganderbal. The temple is dedicated to the goddess Ragnya Devi. Situated 30 km from Srinagar city, it is one of the most sacred pilgrimage sites for Kashmiri Hindus. The temple gets its name from kheer, or milk and rice pudding, that pilgrims pour into the spring inside the temple complex as an offering to the goddess.
- The festival, known as Mela Kheerbhawani, is the largest gathering of Hindus in Kashmir after the annual Amarnath Yatra.

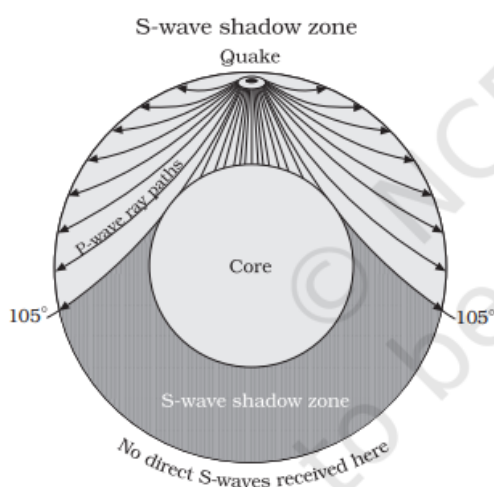
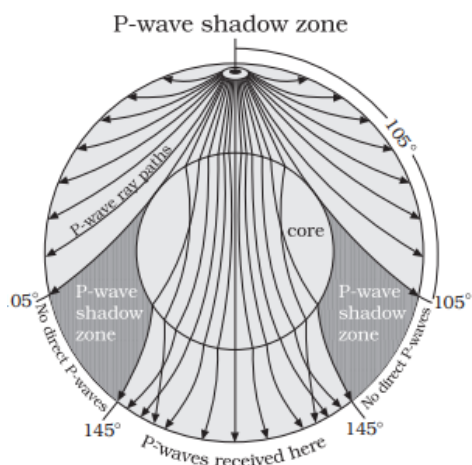
41. (d)

- **Context:** The decades-long demand for an Inner Line Permit (ILP) regime in Meghalaya has been simmering again recently, with members of the Khasi Students' Union (KSU) targeting migrant workers in the state.
- **Statement 1 is not correct:** The ILP regime is in place in four Northeast states – Arunachal Pradesh, Nagaland, Mizoram, and most recently, Manipur. There has been a demand for putting the ILP regime in Meghalaya, but it has not yet been approved.

- **Statement 2 is not correct:** As part of this, any **Indian citizen who does not belong to the state is required to procure** an official travel document called an **Inner Line Permit (ILP)** issued by the state government concerned to visit or stay in these states. An Indian citizen who does not belong to these states cannot stay beyond the time period specified in the ILP. Thus, the ILP regime is applicable to the **whole of the state covered under the regime**. In fact, the permit has to be produced at the inter-state cross borders in order to enter into the state covered under the ILP regime.
- **Statement 3 is not correct:** An ILP is **issued by the state government concerned**.

42. (b)

- **Option (b) is the correct answer:** There exist some specific areas where the waves are not reported. Such a zone is called the 'shadow zone'.
- **P-Waves Shadow Zone:** They are longitudinal waves and can travel in solid, liquid or gas. Thus, they can travel through Earth's solid mantle, liquid outer core as well as solid inner core. However, they **slow down and bend** (refract) sharply when they hit the liquid outer core.
- **S-Waves Shadow Zone:** They are transverse waves and can travel only in solid. As a result, they do not travel through the liquid outer core.
- Thus, seismographs located at any distance within 105° from the epicentre record the arrival of both P and S-waves. However, the seismographs located beyond 145° from the epicentre record the arrival of P-waves but not that of S-waves. Thus, a zone **between 105° and 145° from the epicentre** is identified as the **shadow zone for both types of waves**. The entire zone **beyond 105° does not receive S-waves**.
- The **shadow zone of P-waves** appears as a band around the earth **between 105° and 145° away from the epicentre**.



- **Significance of Shadow Zones:** Scientists use these shadow zones to understand the structure of Earth's **interior layers**, especially the liquid outer core.

43. (a)

- **Statement 1 is correct, and Statement 3 is not correct:** Once the Indian landmass gets sufficiently heated during the summer, the ITCZ shifts northwards, and the westerly jet stream withdraws from its position over the north Indian plain, south of the Himalayas. The Tropical Easterly Jetstream (TEJ) sets in along 15°N latitude only after the western jet stream has withdrawn itself from the region. This easterly jet stream is held responsible for the burst of the monsoon in India.
 - There is a close connection between the TEJ and the Indian summer monsoon rainfall. When the TEJ is stronger, India receives more rainfall.

- **Statement 2 is correct:** The **Somali jet** is a low-level (1 to 1.5 km asl) interhemispheric cross-equatorial flow of air. This Jet originates near Mauritius and the northern part of Madagascar in the Southern Hemisphere. This jet reaches the Kenya coast (at about 3°S) and covers the plains of Kenya, Ethiopia, and the Somali Coast at about 9°N). During May, it moves further into eastern Africa, then into the Arabian Sea and reaches the west coast of India in June. It attains maximum strength in July. Short-period (8-10 days) fluctuations are observed in Low Level Jet stream. Its **strengthening gives rise to a strong monsoon over peninsular India.**

44. (b)

- **Row 1 is correctly matched:** The **soil can be salinized** and/or sodified due to natural factors such as the material of the mother rock that is under the ground or in a nearby area, the topography, the climate, the wind and the type of vegetation. But also by the infiltration of groundwater into areas below sea level. In addition, there are some human activities that accelerate soil salinization: (i) **Excess soil irrigation** with poorly drained irrigation systems or brackish water irrigation from saline aquifers, sewage or industrial by-products, (ii) Deep or conventional soil tillage, (iii) Deforestation or loss of vegetation cover, (iv) Excessive groundwater abstraction in coastal areas, (v) Overuse of fertilizers and other chemical inputs, (vi) Overexploitation of land for agricultural activities. **Improvement of sodic soils** implies the reduction of the amount of sodium present in the soil. This is done in two stages. Firstly, chemicals (such as **gypsum**), which are rich in calcium, are **mixed with the soil**; the calcium replaces the sodium. Then, the replaced sodium is leached from the rootzone by irrigation water.
- **Row 2 is correctly matched:** **Soil acidification** is a natural process, but

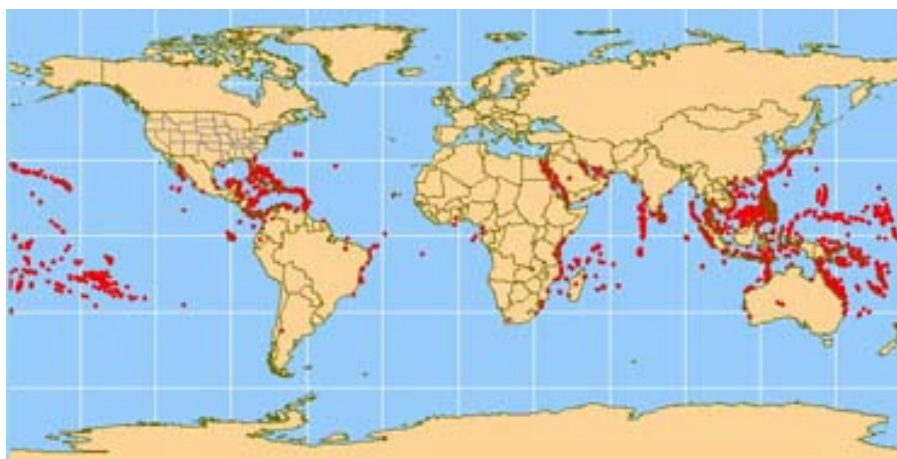
it can be increased by some agricultural practices. Acidification occurs in agricultural soils as a result of reasons such as, removal of plant and animal products, leaching of excess nitrate, addition of some nitrogen based fertilisers, **build-up in mostly plant-based organic matter**. For most **acid soils**, the **most practical management option** is to **add lime** to maintain the current soil pH status or increase surface soil pH.

- **Row 3 is not correctly matched:** Alkali, or **alkaline soils** are clay soils with high pH (> 9), a poor soil structure and a low infiltration capacity. Often, they have a hard calcareous layer at 0.5 to 1 meter depth. Alkali soils owe their unfavourable

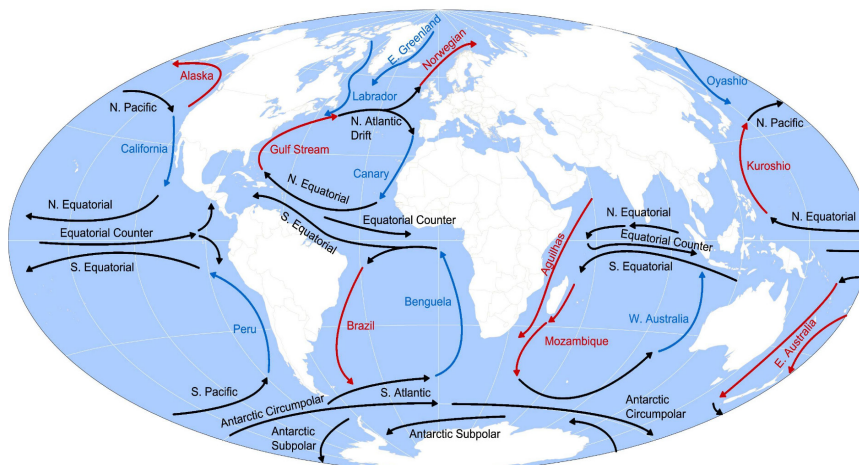
physico-chemical properties mainly to the **dominating presence of sodium carbonate**, which causes the soil to swell. They occur in **semi-arid regions**. Alkaline soils are difficult to take into agricultural production. Alkaline soils are difficult to take into agricultural production. **Ammonia** is **basic** in nature, thus adding ammonia **will further increase the alkalinity of soil**.

45. (a)

- **Statement I is correct:** Coral reefs are generally absent or restricted on the western coasts of continents. Most of the major coral reefs regions are found on the eastern coasts of continents.



- **Statement II is correct:** Along the *west* coasts of the continents, the currents flow toward the equator in both hemispheres. These are called cold currents, as they bring cool water from the polar regions into the tropical regions.



- **Statement III is correct:** Winds blowing across the ocean surface often push water away from an area. When this occurs, water rises up from beneath the surface to replace the diverging surface water. This process is known as upwelling. Globally, most upwelling regions are found along the west coasts of continents.
- **Both Statement II and Statement III provide correct explanation for Statement I:** Coral reefs do not flourish where there are cold currents because of the upwelling of the cold water from the depths that cool the warm surface water.

46. (a)

- **Pair 1 is not correctly matched:** The **Jammu & Kashmir government has launched the “Tree Aadhaar” mission for the conservation of the region’s Chinara trees** which have been dwindling in numbers over the years. Chinara, also known as Oriental plane tree (*Platanus orientalis var cashmeriana*), is a maple-like tree with a huge canopy and is found in cool climate regions with sufficient water. The tree is a characteristic of the Eastern Himalayas. **It is a deciduous tree.** The tree is a major tourist attraction in the valley during the autumn season when its green leaves slowly change into crimson red and golden. Chinaras have hardwood, which makes their wood excellent for carvings, such as for use in carved doors, windows and furniture, for interior details and small ornamental objects. The trees are also known to have some medicinal properties and uses.
- **Pair 2 is correctly matched:** **Tropical Moist Deciduous** forests are more pronounced in the regions that record rainfall between 100-200 cm. These forests are found in the northeastern states along the foothills of the Himalayas, the eastern slopes of the Western Ghats and Odisha. Teak, sal, shisham, hurra, mahua, amla, semul, kusum, and **sandalwood** etc., are the main species of these forests.

47. (a)

- **Row 1 is correctly matched:** **Hope Island** is an island located in **Andhra Pradesh**. A relatively young island, it formed in the last 200 years into a 16-kilometre-long (9.9 mi) **sand spit from the sand carried by the waters of the Godavari delta**. The area between Kakinada coast and Hope Island is known as Kakinada Bay. The water spread of the bay is about 100 km² (39 sq mi). Hope Island protects the city of Kakinada from the strong storm surges coming from the Bay of Bengal. Hope Island acts as a sort of natural breakwater and provides tranquillity to the ships anchored in Kakinada Bay, which makes Kakinada Port one of the safest natural ports on the Eastern Coast of India. **The northern part of the island is called the “Godavari point”,** which overlooks the entry point into the Bay of Kakinada and the Kakinada harbour.
- **Row 2 is not correctly matched:** **Umananda, the world’s smallest inhabited river island,** is located in the **Brahmaputra River in Assam**. Known for its spiritual significance and stunning natural beauty, it features the Umananda Devaloi temple and rare golden langurs. It is to be noted that Assam is also the home to Majuli, the world’s largest river island. The Majuli island is formed by the Brahmaputra River in the south and the Kherkutia Xuti, an anabranch of the Brahmaputra, joined

by the Subansiri River in the north. Mājuli Island is accessible by ferries from the city of Jorhat.

- **Row 3 is not correctly matched: Srirangapattana** is a river island town located in the Mandya district of **Karnataka** state in the course of the **River Kaveri**.

48. (d)

- **Option (d) is the correct answer:** The presence of **three clearly distinguishable seasons** and the **concentration of heavy rainfall in summer** are typical features of **Tropical Monsoon Climate**.
- **Regions of Tropical Monsoon Climate:**
- **Area 1 is not correct:** The area labelled 1 in the map above is most likely to have a **Cool Temperate Western Margin (British Type) Climate**. This type of climate is characterised by an annual temperature range, which is comparatively small for its latitude. Here, summers are never warm, and winters are abnormally mild. The British type of climate has adequate rainfall throughout the year with a tendency towards a slight winter or autumn maximum from cyclonic sources.
- **Area 2 and Area 3 are not correct:** The Area labelled 2 and 3 are most likely to have a **Hot, Wet Equatorial Climate**. These areas witness **great uniformity of temperature throughout the year**. Thus, these areas do not have much seasonal variations. Also, these areas witness heavy **precipitation**, which is **well-distributed** throughout the year.
- **Area 4 is correct:** The area labelled 4 is most likely to have a **Tropical Monsoon Climate**. As explained above, these regions have three distinct seasons that are clearly distinguishable - Cool dry season, hot dry season, and rainy season. With the 'burst' of monsoon, these areas witness torrential downpours. As a result, concentrated heavy rainfall in summer is a characteristic feature of these areas.

49. (c)

- **Statement I is correct:** Joint sitting is an extraordinary machinery provided by the Constitution to resolve a deadlock between the two Houses over the passage of a bill. The provision of joint sitting is applicable only to Ordinary Bills or Financial Bills (both under Article 117(1) as well as 117(2)) and not to Money Bills or Constitutional Amendment Bills. In the case of a Money Bill, the Lok Sabha has overriding powers, while a Constitutional Amendment Bill must be passed by each House separately.
- **Statement II is correct and provides the correct explanation for Statement I:** The Rajya Sabha cannot reject or amend a money bill. The Rajya Sabha can only make the recommendations w.r.t. a Money Bill, which may or may not be accepted by the Lok Sabha. Thus, there is no chance of a deadlock occurring w.r.t a Money Bill, and hence there is no provision for calling a joint sitting for a Money Bill. On the other hand, a Financial Bill under Article 117(1) can be rejected or amended by the Rajya Sabha. Thus, there is a chance of deadlock occurring w.r.t. a Financial Bill under Article 117(1). This is the reason, the Constitution contains a provision for calling a joint sitting for resolving disagreements over a Financial Bill under Article 117(1).
- **Statement III is not correct: Both Money Bills as well as Financial Bills under Article 117(1) can only be introduced** in the Lok Sabha and that too **on the prior recommendation of the president**.

50. (c)

- **1 is correct:** The chief election commissioner and the two other election commissioners have equal powers w.r.t decision-making of the Election Commission of India. In case of difference of opinion amongst the Chief Election Commissioner and/or two other election commissioners, the matter is decided by the Commission by majority.

- **2 is correct:** The Chief Election Commissioner and the two other Election Commissioners receive equal salary, allowances and other perquisites, which are similar to those of a judge of the Supreme Court.
- **3 is not correct:** The Chief Election Commissioner is provided with the security of tenure. He cannot be removed from his office except in same manner and on the same grounds as a judge of the Supreme Court. On the other hand, any other Election Commissioner or a regional commissioner can be removed from office on the recommendation of the Chief Election Commissioner. Thus, the Chief Election Commissioner and the other two Election Commissioners do not equal status w.r.t. security of tenure and removal process.

51. (d)

- **Reservation for Scheduled Castes (SCs) and Scheduled Tribes (STs) in public employment:** This is only an enabling provision under Article 16(4A) of the Constitution. The State may provide reservations but is not constitutionally bound to do so. **Therefore, 1 is not correct.**
- **Reservation for Socially and Educationally Backward Classes in educational institutions:** It is also only an enabling provision under 15(5), which means the State may provide reservations but is not constitutionally mandated to do so. **Therefore, 2 is not correct.**
- **Reservation of seats for Scheduled Castes and Scheduled Tribes in the Lok Sabha:** It is mandated under Article 330 of the Constitution. **Therefore, 3 is correct.**
- **Reservation for women in the offices of Chairpersons at all levels of Panchayats:** Mandated under Article 243D(4) of the Constitution. **Therefore, 4 is correct.**
- **Reservation for Scheduled Castes and Scheduled Tribes in the offices**

of Chairpersons at all levels of Panchayats: Mandated under Article 243D(4) of the Constitution. **Therefore, 5 is correct.** Article 243 D(4) states that:

- Number of offices of Chairpersons reserved for the Scheduled Castes and the Scheduled Tribes in the Panchayats at each level in any State shall bear, as nearly as may be, the same proportion to the total number of such offices in the Panchayats at each level as the population of the Scheduled Castes in the State or of the Scheduled Tribes in the State bears to the total population of the State
- Not less than one-third of the total number of offices of Chairpersons in the Panchayats at each level shall be reserved for women

52. (b)

- **About Autonomous District Councils:** As per the provisions of the Schedule VI of the Constitution of India, The tribal areas in the four states of Assam, Meghalaya, Tripura and Mizoram have been constituted as Autonomous Districts. These Autonomous Districts are governed by a council known as Autonomous Districts Councils (ADCs).
- **Statement 1 is not correct:** An Autonomous District Council consists of 30 members, of whom four are nominated by the governor and the remaining 26 are elected on the basis of adult franchise. The elected members hold office for a term of five years (unless the council is dissolved earlier) and nominated members hold office during the pleasure of the governor.
- **Statement 2 is correct:** The ADCs have the power to collect land revenue, impose taxes, regulate money lending and trading, collect royalties from licences or leases for the extraction of minerals in their areas, and establish public facilities such as schools, markets, and roads.
- **Statement 3 is correct:** The ADCs within their territorial jurisdictions can constitute

village councils or courts for trial of suits and cases between the tribes. They hear appeals from them. The jurisdiction of high court over these suits and cases is specified by the governor.

53. (b)

- **Statement 1 is correct, but Statement 2 is not correct:** As per Article 252, when the legislatures of two or more states pass resolutions requesting the Parliament to enact laws on a matter in the State List, then the Parliament can make laws for regulating that matter. A law so enacted **applies only to those states which have passed the resolutions**. However, **any other state may adopt it afterwards by passing a resolution** to that effect in its legislature.
- **Statement 3 is not correct:** Such a law can be **amended or repealed only by the Parliament** and not by the legislatures of the concerned states.

54. (a)

- **Statement 1 is correct:** India's largest trading partner is the US, and it is also one of the few countries with which India had a trade surplus in 2023-24. On the other hand, USA's top trading partners include - China, Canada and Mexico. Thus, while the United States is India's largest trading partner, India is not the largest trading partner of the United States.
- **Statement 2 is not correct:** The US runs a **trade deficit** with India in both services and merchandise. The USA's trade deficit with India is about \$20 bn in **goods** and about \$5 bn in **services**.
- **Statement 3 is not correct:** **US trade deficit** (in goods and services) hit \$918.4 billion in 2024. The goods trade deficit alone stood at \$1,211.7 billion, partly offset by a \$293.3 billion surplus in services trade. **China remains the biggest driver of this deficit**, accounting for \$295.4 billion, followed by the EU, Mexico, Vietnam and Canada (See graphics). India, though a smaller player, ranked 10th contributing only \$45.7 billion to the US trade deficit.

55. (c)

- **Statement 1 is correct:** Fair and Remunerative Price (FRP) is the minimum price sugar mills have to pay farmers for sugarcane. In 2009, amending the Sugarcane (Control) Order, 1966, the Centre replaced the Statutory Minimum Price (SMP) of sugarcane with the Fair and Remunerative Price (FRP). The FRP is decided by the Centre based on recommendations of the Commission for Agricultural Costs and Prices (CACP) and in consultation with State governments and sugar industry.
- **Statement 2 is correct:** The Minimum Selling Price for sugar was introduced by the Centre under the Sugar Price (Control) Order, 2018. The Minimum selling price (MSP) is the minimum price at which sugar mills can sell sugar to the market. The MSP was introduced by the Centre to ensure that the industry gets at least the minimum cost of production of sugar, allowing them to clear sugarcane dues of farmers. MSP is determined by taking FRP and adding minimum conversion cost incurred by sugar mills running at highest efficiency.

56. (c)

- **Context:** An Indian actress was recently arrested for allegedly smuggling gold from Dubai to India.
- **Statement 1 is correct:** Currently, gold imports in India are largely governed by the Central Board of Indirect Taxes and Customs (CBIC) as per the Customs Act, 1962. The **customs duty for gold may differ depending on the amount of gold** carried by a passenger and the **duration spent abroad** before traveling back to India, as per the Baggage Rules, 2016 (issued under the Customs Act).
- **Statement 2 is correct:** As per the Baggage Rules, 2016, a **man** residing abroad for over a year may carry **up to 20 grams** of jewellery **duty free** (with a value cap of Rs 50,000) and a **woman** may

similarly carry **up to 40 grams** (with a cap of Rs 1 lakh). Thus, female passengers are allowed to carry a higher quantity of duty-free gold than male passengers.

57. (c)

- **Option (c) is correct:** The Reserve Bank of India (RBI) controls inflation through tight monetary policy tools that reduce money supply and credit availability. One of the prominent measures taken by the RBI to control inflation is increasing the policy repo rate, which makes it more expensive for commercial banks to borrow money from the RBI. This leads to higher lending rates for consumers and businesses, reducing spending and curbing inflation.
- **Option (a) is not correct:** Decreasing the CRR would release more funds into the banking system, increasing the money supply. This would encourage banks to lend more and hence stimulate spending, which is the opposite of what is needed to control inflation.
- **Option (b) is not correct:** When the RBI purchases government securities, it injects money into the economy, increasing the money supply. This would fuel inflation rather than controlling it.
- **Option (d) is not correct:** Reducing the SLR would mean that commercial banks are left with more money to lend to customers. This would encourage banks to lend more, hence potentially fueling inflation rather than controlling it.

58. (a)

- **Statement 1 is not correct:** Surcharge is mentioned under **Articles 270 and 271** of the Indian Constitution. Likewise, Cess is mentioned in the Constitution under **Article 277 and Article 270**.
- **Statement 2 is not correct:** Both Cess and surcharge are deposited in the **Consolidated Fund of India (CFI)** but differ in their usage. Surcharge is spent like other taxes, while cess must be allocated separately and used only for its specific purpose.

- **Statement 3 is not correct:** Surcharge is generally levied on direct taxes (like income tax), but Cess can be levied on both direct taxes (like income tax) and indirect taxes (like customs duty). For example, a cess levied on Capital Gains Tax is a type of cess on direct tax. On the other hand, GST Compensation Cess is a type of cess on indirect tax.
- **Statement 4 is correct:** Cess is a tax on tax, and is levied on the total tax liability, which includes the base tax and surcharge (if applicable).

59. (c)

- **About Tariffs:** A tariff is a tax imposed by one country on the goods and services imported from another country to influence it, raise revenues, or protect competitive advantages.
- **Statement 1 is correct:** When a country imposes higher tariffs on an ongoing import of a particular product from a particular country (often an efficient producer of the product), the import becomes costlier. As a result, import shifts to another country which has lower tariffs (often a country with preferential trade agreement, but a less efficient producer). Thus, a higher tariff results in trade diversion, with imports shifting from more efficient producers to less efficient ones.
- **Statement 2 is correct:** Imposition of higher tariffs on imports means that the price of imported goods increases. Thus, consumers have to pay a higher price, and hence their benefits reduce. A higher tariff and hence an increased price of imports allows the domestic producers of the same good to increase their prices as the competition is reduced. As a result, the benefits of producers increase. However, often, the amount of increase in gain for domestic producers is lesser than the amount of reduction in benefits for the consumers. Thus, the loss to consumers outweighs the gains to producers, resulting in a decline in overall efficiency of the economy.

- **Statement 3 is correct:** One of the key principles of the WTO is tariff binding, which ensures predictability and stability in global trade. Bound tariffs are the maximum tariff rates that a WTO member commits to under its Schedule of Concessions. These commitments are legally binding, meaning a country cannot impose tariffs above this level without renegotiation. Applied tariffs are the actual tariff rates a country levies on imports. These can be lower than the bound rate but cannot exceed it without violating WTO rules.

60. (c)

- **Option (c) is the correct answer:** An open-source AI system means that its source code, algorithms, and sometimes even training data are made publicly available. This allows developers, researchers, and organizations to study, modify, and improve the AI system.

61. (d)

- **1, 2 and 3 are correct:** Smart Protein refers to sustainable, alternative protein sources that reduce dependence on traditional animal-based proteins while being environmentally friendly. The following are considered sources of smart protein:
 - **Plant-Based Meat Alternatives:** These are made from plant ingredients (e.g., soy, peas, wheat) that mimic the taste and texture of animal meat.
 - **Fermentation-Derived Proteins:** Microorganisms (such as fungi, yeast, or bacteria) are used in precision or biomass fermentation to produce protein-rich food products
 - **In-vitro cultured meat:** It is produced by cultivating animal cells in a controlled environment, eliminating the need for livestock farming

62. (c)

- **Statement 1 is correct:** Quantum bits (qubits) exploit superposition, existing in multiple states (0 and 1) at once, enabling parallel computations.

- **Statement 2 is not correct:** Quantum computing has a higher error rate than classical computing. Quantum states are fragile and susceptible to external disturbances (decoherence), leading to frequent errors.
- **Statement 3 is correct:** Most modern encryption methods rely on mathematical problems that are extremely difficult for classical computers to solve. However, quantum computers leverage unique quantum properties like superposition and entanglement, allowing them to solve these problems exponentially faster. If a sufficiently powerful quantum computer is built, it can easily break current encryptions.

63. (a)

- **Statement 1 is correct:** Solid-state batteries replace the liquid electrolyte in traditional lithium-ion batteries with a solid electrolyte (such as ceramics, sulfides, or polymers). This allows them to store more energy in a smaller space, leading to higher energy density.
- **Statement 2 is not correct:** On the contrary, solid-state batteries are safer than conventional lithium-ion batteries. Lithium-ion batteries use a flammable liquid electrolyte, which can cause thermal runaway, overheating, and fires if damaged. Solid-state batteries, on the other hand, use a non-flammable solid electrolyte, making them less prone to overheating and fire hazards.

64. (a)

- **Statement I is correct:** DMH-11 was developed using the barnase-barstar system, a genetic engineering technique designed to create hybrid mustard varieties. Mustard is largely a self-pollinating crop, and this system enables efficient, controlled cross-pollination.
- **Statement II is correct:** The barnase gene is introduced to make the plant male-sterile, preventing self-pollination. The barstar gene, when crossed with the

barnase-containing parent, restores fertility in the resulting hybrid offspring.

- **Statement-II is the correct explanation for Statement-I:** In essence, the barnase-barstar system, as described in Statement II, provides the specific genetic tools (male sterility and fertility restoration) that enable plant breeders to overcome the challenges of self-pollination and successfully create hybrid mustard varieties, as stated in Statement I. Therefore, Statement II provides the biological explanation for the technological achievement described in Statement I.

65. (b)

- **Statement 1 is correct:** In the absence of Earth's gravity, bodily fluids redistribute. Less pull downwards leads to fluids shifting towards the upper body, often causing facial puffiness and a feeling of congestion. Chronic weightlessness can cause bodily fluids such as blood and cerebrospinal fluid to move toward the head, which can lead to optic nerve swelling, folds in the retina, flattening of the back of the eye, and swelling in the brain. This collection of eye and brain changes is called "**spaceflight associated neuro-ocular syndrome,**" or SANS.
- **Statement 2 is not correct:** Weightlessness actually leads to a '**decrease**' in **bone density**. Without the constant stress of gravity, the **bones lose minerals and become weaker and more brittle**, a condition similar to osteoporosis. Skeletal rigidity is not a typical consequence.
- **Statement 3 is correct:** Outside Earth's protective atmosphere and magnetosphere, astronauts are exposed to higher levels of cosmic radiation. This radiation can penetrate the body and damage DNA, potentially increasing the long-term risk of cancer and other health issues.

66. (c)

- **Statement 1 is correct:** These cells are derived from the inner cell mass of a

blastocyst (an early-stage embryo). They are classified as pluripotent, meaning they have the remarkable ability to differentiate into 'all' cell types of the human body, including all the cells of the three germ layers (ectoderm, mesoderm, and endoderm). However, they cannot form the extraembryonic tissues like the placenta

- **Statement 2 is not correct:** These stem cells are found in various tissues throughout the adult body. They are generally considered **multipotent**, meaning **they can differentiate into a 'limited' range of cell types** that are typically related to their tissue of origin.
- For example, hematopoietic stem cells in the bone marrow can differentiate into various types of blood cells, but not into nerve cells or skin cells. While some adult stem cells may exhibit more plasticity than initially thought, they are not capable of differentiating into 'all' cell types of the human body.
- **Statement 3 is correct:** Induced pluripotent stem cells (iPSCs) are adult somatic cells (like skin or blood cells) that have been reprogrammed in a lab to revert to a pluripotent state, similar to embryonic stem cells. Therefore, iPSCs are also capable of differentiating into 'all' cell types of the human body.

67. (a)

- **Assertion is correct:** Their coins were **predominantly of copper and lead**, however, silver issues are also known. These coins carried the motifs of fauna like elephants, lions, bulls, horses, etc. often juxtaposed against motifs from nature like hills, tree, etc. The silver coins of the Satavahanas carried portraits and bilingual legends, which were inspired by the Kshatrapa types.
- **Reason is correct:** The Satavahanas were the early rulers of the region between the rivers, Godavari and the Krishna. They were also referred to as the Andhras. They soon brought under their control, both

the Western-Deccan and Central India. The dates of their coming in to power are contentious and are variously put between 270 BC to 30 BC. **Lead deposits were found in the Deccan region**, which provided a readily available source of the metal for the Satavahana rulers.

- **Reason is the correct explanation of Assertion:** The availability of lead in the Deccan region (R) directly explains why the Satavahanas preferred to issue coins predominantly in lead (A). The abundance of the material made it practical and economical for them to use it for coinage.

68. (d)

- **Statement 1 is correct:** Montagu–Chelmsford Reforms had recommended that Indian Civil Service examinations be conducted simultaneously in India and England. From 1922 onwards the Indian Civil Service Examination began to be held in India also, first in Allahabad and later in Delhi with the setting up of the Federal Public Service Commission. The Examination in London continued to be conducted by the Civil Service Commission.
- **Statement 2 is correct:** Lee Commission, in their report in the year 1924, recommended that the statutory Public Service Commission contemplated by the Government of India Act, 1919 should be established without delay.
- **Statement 3 is correct:** The Government of India Act of 1935 provided for the establishment of a **Federal, provincial and joint public service commission**.

69. (a)

- **Statement 1 is correct:** **Guru Ravidas** (flourished 15th or 16th century) was a mystic and poet who was one of the most renowned of the saints of the North Indian **bhakti movement**.
 - Some 40 of the poems attributed to Ravidas were included in the Adi Granth (“First Volume”), the sacred scripture of **Sikhism**, and it is

generally accepted that Ravidas met Nanak, the first Guru and founder of the Sikh tradition.

- **Statement 2 is correct:** Vaishnavite movement, centered around the worship of Rama and **Krishna**, who were seen as incarnations (avatars) of Lord Vishnu. Its main exponents were **Surdas**, Mirabai, Tulsidas and Chaitanya. Their path to salvation was expressed through the medium of poetry, song, dance and kirtans.
 - Surdas (1483-1563) was a disciple of the famous teacher, Vallabhachara. He was a blind poet, whose **songs are centered around Krishna**. His ‘Sursagar’ recounts the **exploits of Krishna during his childhood and youth** with gentle affection and delightfulness.

- **Statement 3 is NOT correct:** **Andal** was a female **Alvar saint-poet** of the **Tamil Bhakti movement**, not the Kannada Bhakti movement.

70. (a)

- **Pair 1 is correctly matched but Pair 2 and Pair 3 are NOT correctly matched:** The whole Tamil region in Sangam period was divided into five tinais or eco-zones, i.e., zones based on their economic resources. These were **kurinji (hilly region); palai (arid zone); mullai (pastoral tracts); marudam (wet lands); and neital (seacoast)**.

71. (a)

- **Statement 1 is correct:** The ‘**Varman**’ suffix were added to the names of the kings was also a part of the **process of claiming kshatriya status** e.g. **Adityavarman** (871-906 CE) and **Parantaka Varman** (707-755 CE).
- **Statement 2 is correct:** **Justice** was carried out by the **village assemblies** through the **committees** comprising **Nyayattar**. The central court of justice was the Dharmasana which conducted its affairs through Dharmasana bhattas (brahmanas proficient in law). It appears

that civil and criminal offences were not dealt separately. The penalty for crime committed by a person affecting the king or ruling dynasty was decided by the king himself. Several methods of punishment prevailed viz. imposition of fines, capital punishment etc.

- **Statement 3 is NOT correct:** 'Chola Meykkirttis' refer to **Kantalur Salai** which has been interpreted as an **educational institution in the Chera kingdom** which imparted **military education and training** to the brahmanas which is mentioned in **Meykkirttis**, the **place where Chera fleet was destroyed by the Chola king**. This proves that Chola military prowess was insurmountable.

72. (d)

- **Statement 1 is correct:** Sri Aurobindo Ghosh criticized British imperialism and preached a revolutionary concept of nationalism. He urged the citizens to boycott British institutions and goods and was one of the prominent protesters of the 1905 Partition of Bengal.
- **Statement 2 is correct:** In India, during the year 1908, a criminal case known as the "**Emperor vs Aurobindo Ghosh and others**" unfolded, colloquially referred to as the **Alipore bomb case**, the Muraripukur conspiracy, or the Manicktolla bomb conspiracy. He was acquitted in 1909 after a long trial.
- **Statement 3 is correct:** He was associated with journals and periodicals like the Jugantar, Bande Mataram, and the Karmayogi.

73. (c)

- **Option (c) is correct:** **Jean-Baptiste Tavernier** was the most famous **French traveller** of the **seventeenth century**. He was a jeweller by profession and came to India during the reign of Shah Jahan. He was an experienced and adventurous traveller and was not afraid of the dangers of travel. He had made seven trips to the east, out of which he came to India six times.

- He provides important information about the tricks and methods used in commercial activities by merchants, moneylenders, and sarrafs in India.

74. (d)

- **Statement 1 is correct:** **Bead-making** also was an important craft. Beads were made of precious and semiprecious stones such as agate and carnelian. Steatite was used for making beads. The evidence of beadmakers' shops have been found at **Chanhudaro** and **Lothal**. Gold and silver beads have also been found.
- **statement 2 is correct:** Indus Valley artisans used a **variety of materials for bead-making**, including metals like **copper, bronze, and gold**, as well as semi-precious stones and other materials.
- **Statement 3 is correct:** Archaeologists use various indicators to identify craft production sites, including the **presence of unfinished objects**, tools, raw materials, and **waste materials** such as debris and slag.

75. (a)

- **Statement 1 is correct:** The **Miyawaki** is a **Japanese technique** that involves **planting a large number of native species of plants and trees in a small area** to create an **ecosystem which mimics a forest**. Though these forests require significant investment and manpower to ensure the plants' survival in the early stage; however after 2-3 years, they become self-sustaining ecosystems, and ensure **high survival rates of the species**.
- **Statement 2 is correct:** In Miyawaki forests, the **saplings or seeds are densely planted in a limited area**. Because the plants are so close together, they shoot up quickly and **achieve rapid growth** due to **competition for sunlight**. They usually grow to their full length within three years, compared to the much longer periods required by normal forests.

- **Statement 3 is not correct:** Since Miyawaki forests have **more tree diversity and are comparatively denser** than the conventional plantations, they tend to absorb more carbon. Thus the **rate of carbon sequestration** in Miyawaki forests is **generally higher than that in conventional plantations**.

76. (b)

- **About Nano Bubble Technology:** It is a novel method of improving water quality by using incredibly tiny bubbles (having diameter of 200 nanometers), called nanobubbles.
- **Statement 1 is not correct:** Unlike regular bubbles that rise to the surface and pop, nanobubbles remain suspended in the water for a long time.
- **Statement 2 is correct:** They have a strong negative charge, which helps them interact with pollutants and break down the impurities in the water. Nano bubbles also significantly increase oxygen transfer efficiency, which enhances oxidation and degradation of organic pollutants in water.

77. (a)

- **About Biopolymers:** They are **naturally occurring polymers produced by living organisms**. They are widely used in **biomedicine, pharmaceuticals, food packaging** etc.
- **A-2: Chitin** is the **second most abundant biopolymer** on earth after cellulose. It forms the protective exoskeleton in crustaceans and insects. Chitin is usually **derived from the shells of crustaceans** such as crab, shrimp, shellfish and crawfish.
- **B-1: Polyhydroxyalkanoates (PHAs)** are **biodegradable polymers** derived from **microbial fermentation processes utilizing various organic sources**. PHAs are **synthesized** and stored by **various bacteria** and archaea **in their cytoplasm** as water-insoluble inclusions.
- **C-3: A starch-based bioplastic** is a type of bioplastic that is **obtained from the starch of carbohydrate-rich plants like**

corn, cassava, and potato. The plant starch is modified into a thermoplastic form, allowing it to be processed and transformed into the desired shape.

- **D-4: Collagen** is the **most abundant protein in human body**. It provides structure, support or strength to skin, muscles, bones and connective tissues. Collagen is **derived from connective tissues of animal flesh** like meat and fish.

78. (c)

- **About Nitrogen fixation:** It is the process of **converting free atmospheric nitrogen into a form that can be used by plants and other organisms**. It can occur naturally through lightning or through industrial processes.
- **Leguminous plants** aid in Nitrogen fixation as they **stimulate the formation of root nodules in association with certain bacteria** such as *Rhizobium*. Within the nodules, the **bacteria convert free nitrogen to ammonia**, which the host plant utilizes for its development.
- **1 is correct: Alfalfa** is a **perennial leguminous plant** of the pea family. It is known for its **tolerance of drought and extreme temperatures**. It is grown as a cover crop, **green manure**, animal feed etc. and is also used in soil improvement processes.
- **2 is correct: Chickpea** is an important **leguminous plant** in India, Africa, and South America. Its seeds are **high in fibre and protein** and are a good source of **iron, phosphorus**, and folic acid.
- **3 is correct: Soybean** is an annual leguminous plant. It is **one of the richest and cheapest sources of protein**. It is used in making oil, tofu, soy milk etc.

79. (d)

- **Statement 1 is correct:** The GloLitter Partnership Project aims to **prevent and reduce Marine Plastic Litter from shipping and fisheries**. It encourages improving waste management practices,

better disposal methods, and reducing plastic waste from these industries to reverse the negative environmental impacts on the marine environment.

- **Statement 2 is correct:** The GloLitter Partnership Project is jointly implemented by IMO and FAO.
- **Statement 3 is correct:** India is a **Lead Partnering Country** in GloLitter Partnership Project. The **Ministry of Fisheries** is the nodal ministry for the Project.
- **Additional information:** India is also a **signatory to the International Convention for Prevention of Pollution from Ships** (known as the MARPOL Convention).

80. (a)

- **About biological diversity:** In Biosphere, immense levels of **diversity and heterogeneity** exists at all levels of **biological organization**. The most important among them are Genetic diversity, Species diversity and Ecosystem diversity.
- **Statement 1 is correct:** **Genetic diversity** refers to the **variation in genes within a species**. It depicts high diversity shown **at the genetic level by a single species over its distributional range**. The presence of **multiple varieties of mango** or **different types of rice** in India is an example of genetic diversity.
- **Statement 2 is not correct:** **Species diversity** refers to the number of species and their abundance in a given area. The **Western Ghats having a higher number of amphibian species compared to the Eastern Ghats** is an example of Species diversity.
- **Additional information:** Ecosystem diversity refers to the variety of habitats, communities, and processes that exist in a geographic area. For example, India, with its rainforests, deserts, mangroves, alpine meadows, coral reefs etc. has a greater Ecosystem diversity than a Scandinavian country like Sweden.

81. (c)

- **Option (c) is the correct answer:** Amensalism is a type of species interaction where one species is harmed, and the other remains unaffected. In the given example, Penicillium (a fungus) produces penicillin, which inhibits the growth of bacteria, but Penicillium itself is not affected. Therefore, it is an example of Amensalism.

82. (b)

- **1 is not correctly matched:** “EnviStats India 2024: Environment Accounts”, known as **EnviStats India Report** is released by The **Ministry of Statistics and Programme Implementation (MoSPI)**. The report includes the taxonomic faunal and floral diversity of India, the status of the Leopard and Snow leopard, information on Genetic Conservation, Soil Nutrient Index etc.
- **2 is correctly matched:** The *Assessment Report on the Interlinkages Among Biodiversity, Water, Food and Health*, known as the **Nexus Report** is released by **IPBES**. It suggests that working together on biodiversity, water, food, health and climate change will likely lead to best outcomes in achieving the SDGs.
- **3 is not correctly matched:** The **Living Planet Report (LPI)** is released by the **World Wide Fund for Nature (WWF)**. The LPI monitors changes in the size of populations of various species over time. Thus, it serves as an early warning indicator for extinction risk and helps in understanding the health of ecosystems.

83. (b)

- **Context:** Recently, the Prime Minister of India visited Mauritius.
- **1 is correct:** Recently, India, Sri Lanka, the Maldives and Mauritius signed a Charter and a Memorandum of Understanding for the establishment of the secretariat of **Colombo Security Conclave (CSC)**. The Colombo Security Conclave (CSC) is a regional security grouping with its core objective to promote regional security

by addressing transnational threats and challenges of common concern to the Member States. The Colombo Security Conclave was established in 2020 when **India, Sri Lanka** and the **Maldives** agreed to expand the scope of their trilateral meeting on maritime cooperation. **Mauritius** joined the conclave at the fifth meeting of the grouping in Male in March 2022. Recently, **Bangladesh** was joined as the fifth member of the CSC.

- **2 is correct:** India and France are deepening maritime cooperation to achieve a peaceful and secure Indian Ocean Region, with **India assuming the chair of the Indian Ocean Rim Association (IORA) in 2025** for two years. The Indian Ocean Rim Association includes 23 countries from Africa, West Asia, South Asia, South East Asia, Australia and littoral states situated in and around the Indian Ocean. **Both India and Mauritius are members** of the IORA.
- **3 is not correct:** The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organization that was established on 06 June 1997 with the signing of the Bangkok Declaration. Currently, it has **7 members** - Bangladesh, Bhutan, **India**, Myanmar, Nepal, Sri Lanka, and Thailand. Thus, **Mauritius is not a member** of BIMSTEC.
- **4 is correct:** The ‘Indian Ocean Naval Symposium’ (IONS) is a voluntary initiative that seeks to increase maritime cooperation among navies of the littoral states of the Indian Ocean Region by providing an open and inclusive forum for discussion of regionally relevant maritime issues. IONS comprises 25 member nations that are grouped into four sub-regions. Both India and Mauritius are members of the IONS.

84. (a)

- **Row 1 is not correctly matched:** Recently, the **Pradhan Mantri Vanbandhu Kalyan Yojana (PMVKY)**

completed 10 years. This ambitious scheme was launched on October 28, 2014, as a comprehensive strategy to address the unique challenges faced by tribal communities in India. PMVKY focuses on the **holistic development of tribal communities** through integrated village development and capacity-building initiatives in education and livelihoods. The **Ministry of Tribal Affairs is the nodal ministry** for the implementation of the scheme. The six steps under PMVKY include the following:

- PM Adi Adarsh Gram Yojana
- Development of PVTGs - PM JANMAN
- Assistance to Tribal Research Institutions
- Pre-Matric Scholarship
- Post-Matric Scholarship
- Administrative assistance to states for setting up of a project management unit

- **Row 2 is not correctly matched:** Recently, the government doubled the limit of Mudra loan amount under the **Pradhan Mantri Mudra Yojana (PMMY)** to Rs 20 lakh from Rs 10 lakh under a new ‘Tarun Plus’ category to promote entrepreneurship in the country. The scheme **facilitates micro credit/loan to income-generating micro-enterprises engaged in the non-farm sector** in manufacturing, trading or service sectors, including activities allied to agriculture such as poultry, dairy, beekeeping, etc. The **Ministry of Finance is the nodal ministry** for the implementation of the scheme.

- **Row 3 is correctly matched:** Recently, the Education Ministry stopped funds under the Samagra Shiksha Abhiyan (SSA), the flagship school education programme, to some states because of their reluctance to participate in the **Pradhan Mantri Schools for Rising India (PM-SHRI)** scheme. The full form of PM SHRI is Prime Minister’s Schools for Rising India. PM SHRI Scheme (PM Schools

for Rising India) **aims to qualitatively strengthen the existing schools and showcase the implementation of National Education Policy, 2020** and make them exemplar schools over a period of time. Its objective is to prepare more than 14,500 PM SHRI Schools in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students. The **Ministry of Education is the nodal ministry** for implementation of the scheme.

85. (d)

- **Pair 1 is not correctly matched:** Recently, the 6th edition of the **India-Japan joint military exercise, Dharma Guardian**, concluded at the East Fuji Training Area in Japan. Exercise ‘Dharma Guardian’ is an annual exercise and conducted alternatively in India and Japan.
- **Pair 2 is not correctly matched:** Recently, the 20th edition of the **India-USA Joint Military Exercise, Yudh Abhyas 2024**, was organised at the Mahajan Field Firing Ranges, Rajasthan. Since its inception in 2004, Exercise Yudh Abhyas has been held annually, alternating between India and the United States.
- **Pair 3 is not correctly matched:** Recently, **Exercise Khanjar** was held at Tokmok, Kyrgyzstan. The exercise Khanjar is an annual exercise between **India and Kyrgyzstan**.

86. (b)

- **Context:** Mr. Donald Trump, the current president of the USA, has been increasingly pitching his bid to acquire the Greenland.
- **Option (b) is the correct answer:** Greenland is the world’s largest island, lying in the North Atlantic Ocean. Greenland’s deeply indented coastline is 24,430 miles (39,330 km) long, a distance roughly equivalent to Earth’s

circumference at the Equator.

- Greenland is separated from Canada’s Ellesmere Island to the north by only 16 miles (26 km).
- The Baffin Bay and Davis Strait lie to the west of Greenland.
 - The Baffin Bay and Davis Strait connect the Arctic Sea with the Atlantic Ocean.
 - Labrador Cold Current passes through these water bodies.
- The Denmark Strait lies to the east of Greenland. The nearest European country is Iceland, lying about 200 miles (320 km) across the Denmark Strait to the southeast.



87. (d)

- **Context:** PM Modi was honored with a traditional Bihari cultural performance, Geet Gawai on his arrival at Mauritius.
- **Option (d) is the correct answer:** Geet Gawai is a traditional Bhojpuri musical ensemble that embodies the rich cultural heritage brought to Mauritius by women from the Bhojpuri belt of India.
- The roots of **Geet Gawai** is traced back to **India**, particularly the **Bhojpuri-speaking regions of Uttar Pradesh and Bihar**.

88. (c)

- **Statement 1 is correct:** The rare earth elements (REE) are a group of **seventeen metallic elements** - the fifteen lanthanides, with atomic numbers 57 (lanthanum, La) to 71 (lutetium, Lu),

together with yttrium (Y, atomic number 39) and scandium (Sc, atomic number 21). All have similar chemical properties. The rare earth elements have long been recognised as useful because of their unusual chemical and physical properties. Their natural occurrence is strongly dependent on geological circumstances, and only in a few locations are they found in sufficient quantity and concentration and in a suitable form and setting to make their extraction and exploitation economically viable.

- **Statement 2 is correct:** Critical minerals are minerals that are essential to modern-day technologies, including renewable electricity, batteries, electronics, and electric vehicles. What is defined as a critical mineral is usually determined by the mineral's strategic importance to a country, as well as the availability of supply, demand, and the existence of viable substitutes. The **list of critical minerals varies by country.**

89. (d)

- **Option (d) is the correct answer:** Recently, an **application for GI status** has been made for the famous '**Palamaner Terracotta**', an age-old indigenous craft from Palamaner in Chittoor district of Andhra Pradesh. The GI tag has **not yet been granted.**
 - Palamaner Terracotta is a renowned handicraft in vogue with highly professional and complicated designs. This great art form is made with hands, and the clay used for the product is free of chemicals. This environment-friendly products are used as decorative sculptures, utensils, and various household articles for indoor decorations. Some of them include miniature figurines, mega sculptures, and terracotta compost bins, blending tradition with sustainability.
- **Option (a) is not correct:** Growers of the exotic Lakadong turmeric in Meghalaya are facing the heat from "dummy" varieties

of Lakadong Turmeric of Meghalaya. Lakadong Turmeric of Meghalaya has received the GI tag in 2023.

- **Option (b) is not correct:** Recently, 3 food products from Andaman and Nicobar Islands received GI tag:
 - Virgin Coconut Oil: This oil is made traditionally, and is unrefined, unbleached, and free of chemicals or preservatives.
 - **Andaman Karen Musley Rice:** This is an Indigenous rice variety that has been acclaimed for its aromatic flavour, rich nutrient content and resilience in saline soils.
 - Nicobari Coconut: With rich oil content and strong flavour, the Nicobari Coconut attests that the soil of the region and its climate was indeed very friendly.
- **Option (c) is not correct:** Marcha Rice of Bihar received GI tag in 2023. Marcha is a short indigenous cultivar of rice found in West Champaran district of Bihar. By its size and shape, its grain appears like black pepper so it is known as 'Mircha' (pepper in Hindi) or 'Marcha Rice'.

90. (d)

- **1 is correct:** The Coriolis effect, which is produced due to Earth's rotation, causes winds to deflect. If the Earth stops rotating, the Coriolis Effect will disappear. This would lead to a sudden change in wind direction.
- **2 is correct:** The earth's spin also causes a bulge at the equator, where the centrifugal force is the strongest. This bulge affects the distribution of water on the planet, making the oceans deeper at the equator and shallower at the poles. If the earth stopped spinning, the water would redistribute, causing the equator to lose about 21 km of water and the poles to gain about the same amount. This would result in massive floods in polar regions and droughts in others.

- **3 is correct:** The earth's spin also affects the length of the day and the seasons. If the earth stopped spinning, the day would last as long as a year, or about 365 days. This means that one side of the earth would face the sun for half a year while the other side would be in darkness. The temperature difference between the two sides would be enormous, reaching up to 100°C. The seasons would also change depending on the tilt of the earth's axis.

91. (b)

- **Row 1 is not correctly matched:** Recently, the Indian Army unveiled a statue of Chhatrapati Shivaji at eastern Ladakh's Pangong Tso. **Pangong Tso**, meaning "high grassland lake", also referred to as Pangong Lake, is an endorheic lake in the Himalayas situated at a height of about 4,350 m (14,270 ft). It is 134 km (83 mi) long and **extends from India to China**. Approximately 60% of the length of the lake lies in China. It is **not part of the Indus River basin area** and is geographically a separate land-locked river basin. **Formerly, Pangong Tso had an outlet to Shyok River**, a tributary of the Indus River, **but it was closed off due to natural damming**.
- **Row 2 is correctly matched:** Lake Victoria is turning green due to the increased presence of cyanobacteria. An international team of researchers from North America and Kenya has completed a genetic survey of cyanobacteria in the Winam Gulf of Lake Victoria, Kenya. The study provides a model for understanding how such blooms could evolve in Lake Erie, United States, under a warming climate. **Lake Victoria is the largest lake in Africa**, lying mainly in Tanzania and Uganda but bordering on Kenya. The Nile River is the longest river in the world and is called the father of African rivers. The Nile is formed by three principal streams: the Blue Nile, the Atbara, and the White Nile. **The headstreams of the White Nile flow into Lakes Victoria and Albert.**

- **Row 3 is correctly matched: Lake Erie** is the fourth largest of the five Great Lakes of **North America**. It forms the boundary between Canada to the north and the United States to the west, south, and east. The lake **discharges at its eastern end through the Niagara River**, and its western end contains all of the lake's islands, the largest being Pelee Island, Ontario.

92. (d)

- **Option (d) is the correct answer: Recently, the Ministry of Mines** through a gazette notification has **shifted minerals Barytes, Felspar, Mica and Quartz** from the list of minor minerals **to the category of major minerals**.
- This move follows the recent approval of the National Critical Mineral Mission by the Union Cabinet. The Mission envisages exploration and mining of critical minerals within the country, including recovery of these minerals from mines of other minerals, overburden and tailings.
- Quartz, Felspar and Mica are found in pegmatite rocks, which are an important source of many critical minerals such as Beryl, Lithium, Niobium, Tantalum, Molybdenum, Tin, Titanium, Tungsten, etc. These minerals have a vital role in various new technologies, energy transition, spacecraft industries, the healthcare sector, etc. When the leases of Quartz, Felspar and Mica are granted as minor mineral leases, the leaseholders do not declare the existence of critical minerals or extract the critical minerals associated with them, such as Lithium, Beryl, etc., as their primary objective is to use these minerals as minor minerals for construction, glass / ceramic making, etc. Consequently, the critical minerals associated with these minerals are neither extracted nor reported.

93. (a)

- **Statement 1 is correct:** The Central Highlands form a part of the Peninsular Plateau. They are bounded to the west by the Aravali range. The Satpura range is

formed by a series of scarped plateaus on the south. An eastern extension of the Central Highland is formed by the Rajmahal hills, to the south of which lies a large reserve of mineral resources in the Chotanagpur plateau.

- **Statement 2 is correct:** Meghalaya Plateau, as a constituent of the Northeastern Plateau, also forms a part of the Peninsular Plateau. The Meghalaya plateau is further subdivided into three: (i) The Garo Hills, (ii) The Khasi Hills, and (iii) The Jaintia Hills, named after the tribal groups inhabiting this region. An extension of this is also seen in the Karbi Anglong hills of Assam.
- **Statement 3 is not correct:** Gawilgarh Hills are a part of the Satpura Range and spread over Maharashtra and Madhya Pradesh. Hazaribagh Plateau is a part of Chhota Nagpur Plateau and lies in Jharkhand.

94. (a)

- **Context:** A recent scientific study has revealed that the **unchecked melting of the Antarctic ice sheet** is leading to the **slowing down** of the world's strongest ocean current - the **Antarctic Circumpolar Current (ACC)**.
- **About Antarctic Circumpolar Current (ACC):** Antarctic Circumpolar Current (ACC) is a wind-driven surface oceanic current encircling Antarctica and flowing from west to east.



- **Statement 1 is correct:** The strong eastward flow of the ACC represents the world's largest current system.
- **Statement 2 is correct:** It connects all three main basins of the global ocean - Atlantic, Pacific, and Indian Ocean basins. Thus, it integrates and responds to climate signals around the world.
- **Statement 3 is not correct:** Beyond its role in regulating climate, the ACC serves as a natural barrier preventing invasive species from reaching Antarctica. A weakening current could allow non-native marine life, such as bull kelp or molluscs, to disrupt Antarctic ecosystems, altering food sources for native species like penguins.

95. (d)

- **Statement I is not correct:** The immense energy required for the development of a tropical cyclone is mainly derived from the release of latent heat energy during the condensation of water vapour. This heat energy generally concentrates in the core region of a tropical cyclone, causing the temperature at the storm centre to be higher than the outer region, and this structure is known as "warm-core". If the warm-core structure is damaged, the development of the tropical cyclone will be impacted. **Strong vertical wind shear (change in wind speed and direction with the altitude in the atmosphere) could tilt the convective clusters near the centre of the tropical cyclone.** Not only will this weaken the vertical activities of the convections, but it will also shift the heat and moisture away from the core region, resulting in an **adverse impact on the warm-core structure**, which could eventually affect the **development of tropical cyclones**.
- **Statement II is correct:** The energy that intensifies the storm comes from the condensation process in the towering cumulonimbus clouds surrounding the centre of the storm.

96. (c)

- **About Gross Fixed Capital Formation (GFCF):** Gross Fixed Capital Formation (GFCF) is defined as the acquisition of produced assets (including purchases of second-hand assets), including the production of such assets by producers for their own use, minus disposals.
- **Statement 1 is correct:** Gross Fixed Capital Formation (GFCF) represents 'investments' in fixed assets like machinery, buildings, and infrastructure. A higher GFCF means a higher **investment in the fixed assets**. This **increases aggregate demand** in the short run, boosting economic activity.
- **Statement 2 is not correct:** While higher GFCF and industrial investments can boost manufacturing and infrastructure, it does not directly reduce the services sector's share. **In fact, services often grow alongside industrial expansion.**
- **Statement 3 is correct:** Increased GFCF often involves investments in new technologies and equipment, which can enhance labor productivity. When workers have access to better tools and infrastructure, they can produce more output with the same amount of effort.

97. (b)

- **About Trade Deficit:** A trade deficit occurs when a **country's imports exceed its exports**.
- **Statement 1 is not correct:** Capital inflows (like FDI, FPI, and external borrowings) are recorded in the capital account of the Balance of Payments (BoP). They do not directly impact the trade deficit, though they have an indirect impact on trade balance. Large inflows of capital can lead to currency appreciation, making exports more expensive and imports cheaper. This worsens the trade deficit.
- **Statement 2 is correct:** Import tariffs increase the price of imported goods, making them less competitive compared to

domestic products. This can reduce import volumes and therefore, reduce the trade deficit.

- **Statement 3 is correct:** Policies that encourage the growth of export-oriented industries can increase a country's exports. This leads to higher export volumes, which directly helps to reduce the trade deficit.

98. (c)

- **Statement 1 is correct:** Changing the base year reflects changes in the economy's structure over time. Different sectors and industries grow at varying rates, and a new base year will provide a more accurate picture of their current relative contributions to GDP. Emerging sectors (e.g., digital economy, gig economy) may get higher weightage, while some older industries may have reduced contributions.
- **Statement 2 is not correct:** Change in base year does not have impact on the change in growth rate of output because growth rates are chain-linked and do not change with rebasing.
- **Statement 3 is correct:** Since GDP is the denominator in these ratios, a rebasing (which changes GDP value) will directly impact them. Fiscal Deficit-to-GDP and Tax-to-GDP Ratios are calculated based on Nominal GDP. If the base year changes, past nominal GDP values are recalculated to reflect the new base year's price structure. So, the ratios will also change.

99. (b)

- **Statement I is correct:** In the case of a Presidential election, Electronic Voting Machines (EVMs) are not used in voting.
- **Statement II is correct:** As per Article 55(3), the election of the President shall be held in accordance with the system of proportional representation by means of the single transferable vote and the voting at such election shall be by secret ballot.
- **Statement II does not provide the correct explanation for Statement I:** The voting in Presidential elections is held through a preferential voting system.

A member of the electoral college for the election of President is required to indicate his preferences by marking 1, 2, 3, 4, etc. against the names of candidates. This means that the voter can indicate as many preferences as there are candidates in the fray. The EVMs do not facilitate such a preferential voting. This is the reason EVMs are used for voting in Presidential elections.

100.(c)

- **Option (a) is not correct:** An important feature of Federal Democracy is 'Supremacy of the Constitution'. The Constitution must be the supreme (or the highest) law of the land. The laws enacted by the Centre and the states must conform to its provisions. Otherwise, they can be declared invalid by the Supreme Court or the high courts through their power of judicial review. If Statement 2 (The legislature holds supreme power and can pass any law without judicial review.) is correct, it will violate the supremacy of the Constitution. Thus, such a state cannot be a Federal Democracy.
- **Option (b) is not correct:** In a Parliamentary system, the head of the government is not elected for a fixed term as in the case of a Presidential system. Instead, in the parliamentary system, the head of the government remains in office

as long as he/she enjoys the confidence of the majority of the Lower House of the Parliament. Thus, if Statement 1 (The Head of Government is elected for a fixed term.) is correct, the State cannot have a Parliamentary system.

- **Option (c) is correct:** If Statement 1 (The Head of Government is elected for a fixed term.) is correct, the State is likely to have a Presidential system. If Statement 2 (The government is elected by people through a free and fair election.) is correct, the state will be a democracy. If Statement 4 (The Federal Court has the authority to adjudicate disputes between the national government and regional government.) is correct, the State is likely to have a Federal system. Thus, if 1, 3 and 4 are correct, the State is likely to have a Federal democracy with a Presidential system.
- **Option (d) is not correct:** A democracy with a Presidential system is characterized by a rigid separation of powers. In such a system, the members of the Executive neither hold membership of the Legislature, nor take any action related to the Legislature. If Statement 5 (The Government can dissolve the legislature and call for fresh elections before its term ends.) is correct, it will violate the principle of rigid separation of powers. Thus, such a state cannot have a Presidential system.

