Test Code
02020925

Date : 09/02/2025
Test Booklet Series

B

परीक्षण पुस्तिका अनुक्रम

anubhav-2025

# ALL INDIA OPEN MOCK TEST

## GENERAL STUDIES PAPER-I

(09th February, 2025)

*Answer Key*

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

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# anubhav-2025

**All India OPEN Mock Test-2 | GENERAL STUDIES PAPER-I**
**(09th February, 2025)**

**1. (b)**

**A:** Vice-President is elected by an electoral college consisting of both elected and nominated members of the Rajya Sabha and Lok Sabha. Therefore, all X,Y and Z are eligible for A.

**B:** President is elected by an electoral college consisting of elected members of both Houses of Parliament (Lok Sabha and Rajya Sabha) and elected members of the State Legislative Assemblies. Nominated members are not eligible. Therefore, Y and Z are eligible for B.

**C:** Speaker of the Lok Sabha is elected by the members of the Lok Sabha only.. Therefore, only Y is eligible for C.

**2. (b)**

**Statement 1 is not correct:** As per Article 99, Every member of either House of Parliament shall, before taking his seat, make and subscribe before the President, or some person appointed in that behalf by him, an oath or affirmation according to the form set out for the purpose in the Third Schedule. As per the third schedule, every MP must take an oath by swearing in the name of God (not Constitution of India). MPs who do not believe in God have the option to solemnly affirm.

**Statement 2 is correct:** According to article 104 of the Constitution of India, if a person sits or votes as a member of either House of Parliament before he has complied with the requirements of article 99, he shall be liable in respect of each day on which he so sits or votes to a penalty of five hundred rupees to be recovered as a debt due to the Union.

**3. (b)**

The concept of '**equal protection of laws**' has been taken from the **American Constitution.** The concept connotes the following inferences:

- The equality of treatment under equal circumstances, both in the privileges conferred and liabilities imposed by the laws.
- The similar application of the same laws to all persons who are similarly situated.
- The like should be treated alike without any discrimination.

Equal protection of law allows for treating people differently based on reasonable classification when needed to ensure substantive equality.The Supreme Court held that where equals and unequals are treated differently, Article 14 does not apply. While Article 14 forbids class legislation, it permits reasonable classification of persons, objects and transactions by the law. But the classification should not be arbitrary, artificial or evasive. Rather, it should be based on an intelligible differential and substantial distinction.

**Statement 1 is not correct:** This violates Article 14. Religious criteria cannot be the sole basis for preferential treatment in employment. Such a policy creates unequal treatment based on religion, which is not a reasonable classification.

**Statement 2 is not correct:** Imposing uniform regulations on businesses without considering their size or nature can be seen

as an example of formal equality but not substantive equality, which is the essence of 'equal protection of the laws.'

**Statement 3 is correct:** While it treats one group (economically disadvantaged students) differently from another, it does so based on a reasonable classification (economic disadvantage) and with a legitimate objective (uplifting the economically weaker sections). This is permissible under Article 14, as it's not arbitrary discrimination but rather a measure to address existing inequalities. It recognizes that treating everyone *identically* might not achieve true equality, and sometimes differential treatment is required to create a more level playing field.

**4. (a)**

**Statement 1 is correct:** An **Indian citizen** living outside India for a period due to employment, business, education, or any other purpose indicating an indefinite stay abroad is known as a **Non resident Citizen (NRI)**. Individuals with NRI status maintain their Indian citizenship, **Overseas Citizens of India (OCIs)** are **individuals from foreign** countries with ancestral ties to India. Introduced in 2005, this relatively recent status aims to enhance the integration of the Indian diaspora into the global community while preserving their individual connections with India. While OCIs are not considered Indian citizens, they are granted specific privileges akin to those of permanent residents in India.

**Statement 2 is correct:** NRIs have limited voting rights. They can vote in Indian elections only if they are physically present in their respective constituencies during the voting period.Therefore, **NRIs are eligible to vote** in general elections of India. While **OCIs** have many privileges, they are **not eligible for** certain rights available to Indian citizens, such as **voting** rights, holding constitutional positions, or government employment.

**Statement 3 is not correct:** OCIs enjoy several benefits, including the ability to travel to India without a visa, work and study in India, **own residential and commercial properties** (except for certain agricultural and plantation properties), and participate in financial transactions.

**5. (c)**

**Statement 1 is correct:** As per article 351 of the constitution of India, it shall be the duty of the Union to promote the spread of the Hindi language, to develop it so that it may serve as a medium of expression for all the elements of the composite culture of India.

**Statement 2 is correct:** As per article 351 of the constitution of India, it shall be the duty of the Union to secure enrichment of Hindi by assimilating without interfering with its genius, the forms, style and expressions used in Hindustani and in the other languages of India specified in the Eighth Schedule, and by drawing, wherever necessary or desirable, for its vocabulary, primarily on Sanskrit and secondarily on other languages.

**Statement 3 is correct:** As per article 344 of the constitution of India, the President shall, at the expiration of five years from the commencement of this Constitution and thereafter at the expiration of ten years from such commencement, by order constitute a Commission which shall consist of a Chairman and such other members representing the different languages

specified in the Eighth Schedule as the President may appoint. Further, It shall be the duty of the Commission to make recommendations to the President as to-

- **Progressive use of the Hindi language for the official purposes** of the Union.
- **Restrictions on the use of the English language** for all or any of the official purposes of the Union.

**6. (d)**

**Option (d) is correct:** Article 31B protects laws and regulations listed under the Ninth Schedule from being challenged or struck down for violating any Fundamental Rights. However, in the I.R. Coelho case, the Supreme Court ruled that laws in the Ninth Schedule do not enjoy absolute immunity from judicial review. The Court emphasized that judicial review is a 'basic feature' of the Constitution and cannot be eliminated by placing a law in the Ninth Schedule. Therefore, any law added to the Ninth Schedule after April 24, 1973, can be challenged if it violates Fundamental Rights under Articles 14, 15, 19, or 21, or if it violates the 'basic structure' of the Constitution. So, the current position is that laws under the ninth schedule do have immunity from being declared void on the grounds of violating some fundamental rights, but they can not violate the Basic structure of the Constitution.

**7. (a)**

**Statement 1 is correct:** According to Article 327 of the Constitution, **Parliament may from time to time by law** make provision with respect to all matters relating to, or in connection with, **elections to either House of Parliament or to the House or either House of the Legislature of a State** including the preparation of electoral rolls, **the delimitation of constituencies and all other matters** necessary for securing the due constitution of such House or Houses.

**Statement 2 is correct:** The number of seats in the Lok Sabha has been frozen as per the 1971 Census in order to encourage population control measures so that States with higher population growth do not end up having higher number of seats. This was done through the 42nd Amendment Act till the year 2000 and was extended by the 84th Amendment Act till 2026.

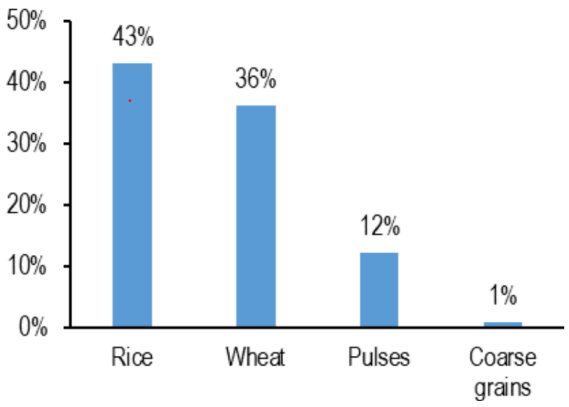
**Statement 3 is not correct:** Like the Lok Sabha, the allocation of seats in State Legislative Assemblies is also currently **based on the 1971 census** (not on the basis of the 2001 census).

**8. (d)**

**About Minimum Support Price (MSP):** It is the minimum rate at which farmers sell their crops to the government. This price prevents farmers from market fluctuation and offers stability and income security.

**Statement 1 is not correct:** Though MSP is announced for about 22 crops, the procurement operation of the government has been largely concentrated on wheat and paddy crops. However, it is not correct that procurement is done only for wheat and rice. **Other crops** for which MSP is announced are **also procured,** such as oilseeds, pulses, cotton, jute, etc. However, Procurement of wheat and paddy is carried out on an open ended basis (i.e., accepting all the grains that are sold to it by farmers) at the declared Minimum Support Price (MSP) fixed by the GOI. This open ended procurement policy for wheat and paddy is an important reason that has contributed towards the predominance of wheat and rice cultivation in India.

Figure 1: Percentage of crop production that was procured at MSP in 2019-20




**Statement 2 is not correct:** For the financial year 2024-25, the **margin between the cost of production and the MSP** for **Kharif crops** is **highest for bajra** at 77 percent, followed by tur at 59 per cent, and maize at 54 per cent. This **margin** is **50 per cent for rice.** For Rabi crops, the margin over cost of production for the financial year 2024-25 was 102 per cent for Wheat, 60 per cent for Barley, 60 per cent for Gram, 89 per cent for Lentil (Masur), 98 per cent for Rapeseed & Mustard and 52 per cent for Safflower. Thus, though the **margin is higher for Wheat as compared to other Rabi crops**, it is **not higher for Rice as compared to other Kharif crops.**

**Statement 3 is not correct:** For the financial year 2024-25, the MSP for Rice was Rs 2300/quintal, whereas it was Rs 4290/quintal for Ragi and Rs 7550/quintal for Tur/Arhar. Similarly, among Rabi crops, the MSP for the year 2024-25 were Rs 2275/quintal for Wheat, Rs 6425/quintal for Lentil (Masur), Rs 5650/quintal for Rapeseed & Mustard. Thus, **MSP for Wheat and Paddy are not higher compared to other crops.**

**9. (b)**

**1 is not correct:** The **Standing Deposit Facility (SDF)** is a monetary policy tool that allows banks to deposit excess liquidity with the RBI without any security or collateral. The RBI introduced this new tool in the year 2022 to absorb excess liquidity from commercial banks. If the RBI **increases the SDF rate, the commercial banks will be willing to park more funds with the RBI**, thus **reducing the liquidity in the market.** The opposite will happen in case of a reduction in the SDF rate.

**2 is not correct:** Under a **Foreign Exchange Swap**, the **RBI can either buy dollars** (US dollars or USD) from commercial banks in exchange for Indian Rupees (INR) **or sell USD** to commercial banks in exchange for INR. In the **case of the RBI buying USD**, commercial banks will get more Indian Rupees, thus **increasing liquidity in the banking system.** However, in the **case of the RBI selling USD**, commercial banks will be left with fewer Indian Rupees, thus **decreasing liquidity in the banking system.** Thus, a foreign exchange swap by the RBI **can either increase or decrease liquidity** in the banking system, depending on the type of swap.

**3 is correct: Reverse repo rate** is the rate at which the central bank of a country (Reserve Bank of India in the case of India) borrows money from commercial banks within the country. It is a monetary policy instrument that can be used to control the money supply in the country. A **decrease in the reverse repo rate will increase the money supply** and vice-versa.

**10. (b)**

**About Government Final Consumption Expenditure (GFCE):** It refers to the total current expenditure of the administrative departments for producing government services. The GFCE is estimated as the following:

GFCE = compensation of employees (wages and salaries + pensions) + net purchase of goods and services + consumption of fixed capital (CFC)

**About Private Final Consumption Expenditure (PFCE)**: It is defined as the expenditure incurred on the final consumption of goods and services by resident households and non-profit institutions serving households (NPISH).

- The estimate of Private Final Consumption Expenditure (PFCE) takes into account the following:
  (i) production;
  (ii) intermediate consumption in agriculture, manufacturing and other industries;
  (iii) net imports;
  (iv) change in stock;
  (v) consumption on government account and
  (vi) Gross Fixed Capital Formation (GFCF).

**Option (b) is the correct answer:** The **correct order of contribution** to GDP is as follows: Private Final Consumption Expenditure (PFCE) > Gross Fixed Capital Formation (GFCF) > Government Final Consumption Expenditure (GFCE).

For example, for the financial year 2023-24, the contributions of these components to India's GDP were as follows:

- Private Final Consumption Expenditure (PFCE): 56.9%
- Gross Fixed Capital Formation (GFCF): 34.9%
- Government Final Consumption Expenditure (GFCE): 9.6%

**11. (a)**

**Statement 1 is correct:** Money market instruments like Treasury Bills, Commercial Papers, and Certificates of Deposit are short-term and debt-based. The capital market includes both equity (such as shares) and long-term debt (such as bonds, debentures).

**Statement 2 is not correct:** Money Market investments have shorter maturity periods. As a result, they are highly liquid and hence are considered lower-risk investments. On the other hand, Capital Market investments, such as equity shares, have longer maturity periods. Thus, they are relatively less liquid, and hence have higher risk associated with them. Market volatility also adds to risk involved in capital market investments.

**Statement 3 is not correct:** Both Treasury Bills and Cash Management Bills are part of the money market.

- **Treasury Bills:** Treasury Bills are presently issued in three tenors, namely, **91 days, 182 days and 364 days.** Treasury bills are zero coupon securities and pay no interest. Instead, they are issued at a discount and redeemed at the face value at maturity.
- **Cash Management Bills (CMBs):** The government of India, in consultation with RBI, introduced a new short-term instrument, known as Cash Management Bills (CMBs), to meet the temporary mismatches in the cash flow of the Government of India. The CMBs have the generic character of T-bills but are issued for **maturities of less than 91 days.**

**12. (c)**

**Option (c) is the correct answer:** The Reserve Bank, in consultation with the Government of India, recently introduced a separate channel, called the **'Fully Accessible Route' (FAR)**, to **enable non-residents to invest in specified Government of India dated securities.** Eligible investors can invest in specified Government securities **without being subject to any investment ceilings.**

The Union Budget 2020-21 announced that certain specified categories of Central Government securities would be opened fully for non-resident investors without any restrictions, apart from being available to domestic investors as well. Accordingly, the RBI, in consultation

with the Government of India, decided to introduce a separate route, viz., Fully Accessible Route (FAR), for investment by non-residents in securities issued by the Government of India

**13. (c)**

**Pair 1 is correctly matched: Steel used by a construction company** is used as an input to produce the final product, i.e. the infrastructure or the buildings. Thus, it is an **intermediate consumption good.**

**Pair 2 is not correctly matched:** A **vehicle purchased by a logistics company** is not a final consumption good but a **capital good**. The logistics company uses the vehicles purchased to provide transportation services and earns periodic income through that.

**Pair 3 is correctly matched: Machinery purchased by a manufacturing firm** is used in the production process to manufacture goods, which are sold to the consumers. Thus, the machinery gives the manufacturer a periodic income and hence is a **capital good.**

**14. (a)**

**Statement 1 is correct:** In 2023-24, the **top merchandise export destinations for India** included the **USA** (17.90%), UAE (8.23%), Netherlands (5.16%), China (3.85%), Singapore (3.33%), UK (3.00%), Saudi Arabia (2.67%), Bangladesh (2.55%), Germany (2.27%), and Italy (2.02%).

**Statement 2 is not correct:** In 2023-24, the **top 3 merchandise commodities exported** from India were **Engineering Goods** (25.22%), Petroleum Products (18.58%), and Gems & Jewellery (7.55%).

**15. (d)**

**Statement 1 is correct:** Satellites are generally launched from the east coast of the countries to take advantage of Earth's rotational velocity, which is directed eastward. This gives an extra boost to the rocket. Also, these rockets travel eastward, so if anything goes wrong during their ascent, the debris would essentially fall into an ocean's waters

**Statement 2 is not correct:** The rotational speed of the Earth at a given latitude remains the same, whether on the east coast or west coast of a country.

**Statement 3 is not correct:** Atmospheric pressure is mainly influenced by altitude, weather, and local atmospheric conditions, not specifically by being on the east or west coast.

Hence, option (d) is the correct answer.

**16. (a)**

**About Large Language Models (LLM):** LLM is a type of artificial intelligence (AI) program that can recognize and generate text, among other tasks. Large language models (LLMs) are machine learning models that can comprehend and generate human language text. They work by analyzing massive data sets.

**1 is correct:** Generative AI is artificial intelligence (AI) that can create original content—such as text, images, video, audio or software code—in response to a user's prompt or request. LLMs are commonly used for generative AI to produce content based on input prompts in human language.

**2 is not correct:** NFTs are digital assets representing ownership or uniqueness, secured using blockchain technology. Their core functionality depends upon cryptographic protocols and blockchain, not LLMs.

**3 is not correct:** Face recognition is a form of artificial intelligence (AI) that mimics a human capability to recognize human faces. Just like when a human recognizes

a face, facial recognition software captures facial features and creates a pattern of facial features which it uses to identify or group a face. LLMs focus on text-based tasks, and are not central to this technology.

**17. (c)**

**1 is correct:** AlphaFold, developed by Deepmind (subsidiary of Alphabet) is an advanced AI system that predicts the 3D structure of proteins based on their amino acid sequences. It is based on a computer system called deep neural network. It uses processes based on "training, learning, retraining and relearning." The first step uses the available structures of 1,70,000 proteins in the Protein Data Bank (PDB) to train the computer model. Then, it uses the results of that training to learn the structural predictions of proteins not in the PDB.

**2 is not correct:** BharatGen is a multimodal multilingual large language model initiative, developing advanced generative AI models tailored to India's linguistic, cultural, and socio-economic diversity. BharatGen includes a consortium of top AI researchers across premier academic institutions in India that include IIT Bombay, IIIT Hyderabad, IIT Mandi, IIT Kanpur, IIT Hyderabad, IIM Indore, and IIT Madras. It is world's first Government-funded Multimodal Large Language Model Initiative.

**3 is correct:** LockBit ransomware is a type of cyberattack that encrypts files on computers, allowing attackers to demand ransom payments in exchange for decryption keys.

**18. (a)**

**Statement 1 is correct:** India imports a significant portion of its uranium for its Pressurized Heavy Water Reactors (PHWRs). Fast Breeder Reactors (FBRs) are designed to produce more fissile material than they consume by "breeding" fuel. Therefore, they can reduce India's dependence on imported uranium.

**Statement 2 is not correct:** FBRs do generate fissile Pu-239, but through the transmutation of Th-232 isotopes used in the blanket around the fuel rod.

**Statement 3 is not correct:** FBRs are primarily designed to use a mix of plutonium and uranium oxides as fuel. They do not directly utilize Thorum as fuel.

**19. (b)**

**A: Parasite, B: Sandflies, C: Virus**

**Lymphatic Filariasis:** Lymphatic filariasis, commonly known as elephantiasis, is a painful and profoundly disfiguring disease. It is caused by infection with parasites classified as nematodes (roundworms) of the family Filariodidea that are transmitted through the bites of infected mosquitos.

Kala azar: Visceral leishmaniasis is commonly known as kala-azar (KA), a word coined in the late nineteenth century in India, which means "black disease", referring to the greyish or blackish discoloration of the skin during infection, from the Hindi word for black (kala) and the Persian word for disease (azar). Kala-azar is a slow progressing indigenous disease **caused by a protozoan parasite of genus Leishmania, which are transmitted by the bite of infected female phlebotomine sandflies**. In India Leishmania donovani is the only parasite causing this disease

**Dengue:** Dengue is a viral infection transmitted to humans through the bite of infected mosquitoes. The dengue virus is transmitted to humans through the bites of infected female mosquitoes, primarily the Aedes aegypti mosquito.

**20. (c)**

**Option (c) is the correct answer:** Wireless charging is possible by means

of electromagnetic induction. Electrical energy is transferred between two objects via a magnetic field. Electrical current passes through coils within the wireless charging pad, creating an electromagnetic field. When the receiving magnetic plate within the mobile phone comes into close range with the transmitter (charging pad), the magnetic field generates an electrical current within the mobile phone. The electrical current converts into direct current (DC), which charges the mobile phone.

**21. (b)**

**Option (b) is the correct answer:** Most planets in the solar system, including Earth, rotate counterclockwise when viewed from above the North Pole. However, Venus is an exception as it rotates clockwise (retrograde rotation) on its axis. Uranus is another exception because it rotates on its side (almost perpendicular to its orbit), giving it a unique axial tilt.

**22. (a)**

**Option A is correct**

The description in the question refers to the **Prayag Prashasti**, also known as the **Allahabad Pillar Inscription**. This inscription is written in **Sanskrit** and composed by Harisena, the court poet of **Samudragupta** (Gupta Empire).

**Allahabad Pillar Inscription** highlights his military campaigns, especially in southern India, where he defeated many rulers and later reinstated them.

Samudragupta was called **Lichchhavi-dauhitra**, meaning "grandson of the Lichchhavis".

Allahabad prashasti describes Samudragupta as a god dwelling on earth, as Purusha (the Supreme Being) and as the equal of the gods **Dhanada (Kubera), Varuna, Indra, and Antaka (Yama).**

The Allahabad Pillar originally had inscriptions of **Mauryan Emperor Ashoka**, and later, the Mughal Emperor **Jahangir** also added an inscription.

**23. (b)**

**Statement 1 is not correct: Shankaracharya (Advaita Vedanta) taught non-dualism (Advaita),** which means that the individual soul (Atman) and Brahman are identical. **Ramanujacharya (Vishishtadvaita Vedanta) did not see them as completely independent and separate.** Instead, he proposed qualified non-dualism (Vishishtadvaita), where the soul is distinct but inseparably connected to Brahman, like a part of a whole. **Since Ramanujacharya did not claim they were completely separate, the statement is not correct.**

**Statement 2 is correct: Shankaracharya believed in Nirguna Brahman** (Brahman without attributes), meaning the ultimate reality is impersonal and beyond form. **Ramanujacharya believed in Saguna Brahman** (Brahman with attributes).

**24. (b)**

**Option B is correct**

**In ancient India, terms *"Hiranya"*, *"Pranaya"* and *"Pindakara"* were associated with taxation.**

**Hiranya**: It was a type of tax, generally paid in **gold or cash** instead of kind. The Mauryas introduced some new taxes and made already existing ones more effective.

**Pranaya**: This referred to a **tribute or tax** imposed by a ruler, often in extraordinary circumstances like war or emergencies.

**Pindakara:** The peasants paid a tax called **pindakara**, which was assessed on groups of villages.

**25. (d)**

**Statement 1 is correct:** Lachit Borphukan, a prominent general of the Ahom

Kingdom, led the Ahom forces to victory against the **Mughal army in the Battle of Saraighat in 1671.** This battle, fought on the Brahmaputra River near Saraighat.

**Statement 2 is correct: The Charaideo Moidams are burial mounds of Ahom kings and queens.** These moidams are akin to pyramids and serve as the royal necropolis, reflecting the architectural and cultural heritage of the Ahom era.

**Statement 3 is correct:** The **Buranjis are historical chronicles of the Ahom dynasty w**ritten in the **Ahom and Assamese languages**.

**26. (d)**

**Statement 1 is not correct:** The Regulating Act of 1773 provided for the **establishment of a Supreme Court of Justice at Calcutta** to give justice to Europeans, their employees and citizens of Calcutta. However, this court had **jurisdiction only over British subjects** in **Bengal, Bihar, and Orissa. It did not have authority over all British subjects across India.**

**Statement 2 is not correct:** The Government of India Act, 1935 created the Federal Court of India in 1937, with jurisdiction over constitutional disputes between provinces and appeals from High Courts. **However, it was not the highest court of appeal for all Indians, as appeals in some cases could still be made to the Privy Council in Britain. The Abolition of Privy Council Jurisdiction Act was passed in 1949 which abolished Privy Councils.**

**27. (b)**

**Option (b) is correct**

**Dantidurga (c. 735–756 CE) –** Founder of the **Rashtrakuta dynasty,** he overthrew the Chalukyas of Badami and established Rashtrakuta rule in the Deccan.

**Dharmapala (c. 770–810 CE) –** A ruler of the **Pala dynasty**, he expanded Pala influence in northern India, especially in Bengal and Bihar.

**Mihir Bhoja (c. 836–885 CE) –** One of the greatest rulers of the **Pratihara dynasty**, he controlled a large part of northern and central India.

**Parantaka Chola I (c. 907–953 CE) –** An important **Chola ruler,** he expanded Chola power in South India. Uttaramerur has multiple inscriptions spanning centuries, the most famous one is from the reign of Parantaka I. These provide a detailed description about the village's self-governance.

**Hence, 2 - 4 - 3 - 1 is the correct chronological order.**

**28. (c)**

**Statement 1 is correct:** Rudreshwara, popularly known as Ramappa Temple, is located in the State of Telangana. **It is the main Shiva temple in a walled complex built during the Kakatiyan period (1123–1323 CE) under rulers Rudradeva and Recharla Rudra.**

**Statement 2 is not correct: The Lepakshi Temple (not Ramappa temple), built during the 16th century, is known for the Hanging Pillar.** What makes this particular pillar special is that it doesn't quite touch the ground and looks as if freely suspended in the air. On the other hand, **use of sandbox foundation and floating bricks are the unique features of Ramappa Temple.**

**Statement 3 is correct: Ramappa Temple was inscribed as a UNESCO World Heritage Site in 2021.** Ramappa Temple is the first heritage site from Telangana to be recognized by UNESCO.

**29. (d)**

**1 is not correct:** The **Black Tiger** (also known as **pseudo-melanistic tiger**), is

a **rare variant of the Bengal tiger**. They are **not entirely black**; rather their black stripes are thicker and close together. A true melanistic tiger, on the other hand, would be almost entirely black. **Melanism** is caused due to **genetic mutation** as a **result of inbreeding** within a small, isolated population of tigers. Simlipal Tiger Reserve in Odisha is the only habitat where black tigers are naturally found currently.

**2 is correct: Hoolock Gibbon** is found only in a small part in the northeast, mainly in the **Karbi Anglong** region and **Kaziranga National Park** of **Assam**. It is also found in some parts of Bangladesh and Myanmar. It is the only ape found in the Indian subcontinent.

**3 is correct: Irrawaddy dolphins** are found in **coastal areas in South and Southeast Asia**, and in three **rivers**: the **Irrawaddy**, the **Mahakam** and the **Mekong**. They can **live in varied habitats, both coastal and freshwater**. In **India**, they are found in **Sundarbans National Park** of **West Bengal** as well as in **Chilka Lake** of Odisha.

**30. (c)**

**(a) is correct:** "**Minor Forest Produce**" is **defined under The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act** (also known as The Forest Rights Act, **2006**), and not under the Indian Forest Act, 1927.

**(b) is correct and (c) is not correct:** Under the 2006 Act, **MFP includes all non-timber forest produce of plant origin**; such as **bamboo, cane, tussar, cocoons, honey, wax, lac, tendu leaves, medicinal plants and herbs, roots, tubers** etc.

**(d) is correct:** The **Government** of India **announces the Minimum Support Price of certain** items of **Minor Forest Produce**.

**Additional information:** The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, gives the "right of ownership, access to collect, use and dispose of minor forest produce which has been traditionally collected within or outside village boundaries". The Act was enacted to protect the marginalized socio-economic class of citizens and balance the right to environment with their right to life and livelihood.

**31. (d)**

The given example of Koel bird laying its eggs in the crow's nest is a type of avian brood parasitism, which is a subset of parasitism.

**About Avian Brood parasitism:** It refers to the **laying of eggs by a bird in the nest of another bird**. It is a reproductive strategy adopted by very few birds.

The **Koel (brood parasite) lays its eggs in crow nests**, thereby **imposing the cost of rearing its offspring onto the crow(the host)**. The Koel is able to do so primarily because of two **reasons**:

- Koel's **breeding period overlaps** with the crow's breeding period .
- Koel's **eggs resemble** those of the crow in pattern and colour.

**Additional information:** In India, birds usually breed in summer so that their chicks could have enough food in the following monsoon.

**32. (a)**

**Context:** The **Government** of India has recently **implemented a ban on nimesulide, under** the **Drugs and Cosmetics Act, 1940**.

Nimesulide is a commonly used **NSAID (harmful non-steroidal anti-inflammatory drug) for veterinary purposes**.

Researchers from the Indian Veterinary Research Institute, Bareilly, have observed a **rapid decline in the population**

**of vultures from poisoning due to nimesulide**. It has been found in vultures' tissues in concentrations **similar to** those seen in **diclofenac poisoning**.

**Additional information:** Vultures are referred to as **nature's sanitation workers** as they play a crucial role in **maintaining the ecosystem health** by **swiftly removing dead animals** that might otherwise spread harmful diseases. However, in the Indian subcontinent, these have seen a catastrophic decline, and several species are on the brink of extinction.

**33. (a)**

**About Coal gasification:** It is a **process of converting coal into synthesis gas** or syngas, **by reacting the coal with oxygen, steam, and/or carbon dioxide. Syngas is** mainly **a mixture of carbon monoxide, hydrogen, and carbon dioxide**.

**Statement-I is correct: Coal Gasification Mission aims to gasify 100 million tonnes of coal by 2030** through surface coal/ lignite gasification projects. The adoption of gasification technology **will reduce India's reliance on imports of Natural Gas, Methanol, Ammonia**, and other essential products.

**Statement-II is correct and correctly explains Statement-I:** According to **Energy Statistics India Report,** around **32% of India's total annual natural gas consumption** is **used for fertilizer production, primarily urea production**. Thus, Synthesis gas produced from coal gasification can be used as a feedstock for producing fertilizers, which will in turn reduce the dependence on imported natural gas.

**Additional information: Other clean coal initiatives** that could mitigate emissions and enhance environmental sustainability include extraction of **Coal Bed Methane** (CBM) gases, **exploring Coal to Hydrogen, Carbon Capture and Storage** (CCS) etc.

**34. (a)**

**Statement 1 is correct: Radon** is a **radioactive gas** that has no smell, colour or taste. Radon is **produced during the natural radioactive decay of radium-226**, which itself is a **decay product of uranium-238. Uranium is a naturally occurring element found in all types of rocks and soil** (in various amounts).

**Radon** escapes from the ground into the air, where it decays and produces further radioactive particles. As we breathe, these **particles are deposited on the cells lining the airways**, where they **can damage DNA** and potentially **cause lung cancer.**

**Statement 2 is not correct: Indoor radon pollution** is primarily caused as a result of **penetration of radon from the soil and rock beneath a building**, through cracks or openings. Some **groundwater in areas having high soil radium content** are also sources of indoor radon. Often, the levels of indoor radon tend to be highest in the lowest levels of a building.

**35. (c)**

**About Carbon dioxide removal (CDR)**: It is a technique that **aims to remove** carbon dioxide **($CO_2$) from the atmosphere and store it under land or in the ocean** for a long term.

**1 is correct: Direct air capture** (DAC) is a technology that **uses chemical reactions to pull $CO_2$ directly out of the atmosphere** at any location. When **air moves over these chemicals, they selectively react with and trap CO2**, allowing the other components of air to pass through. This $CO_2$ can then be **permanently stored in deep geological formations** or used for other applications. Direct air capture is in contrast to 'carbon capture', which is generally carried out

at the point of emissions, such as a steel plant.

**2 is correct: Nutrients** like iron can be **added to the ocean to induce phytoplankton growth**, a process called ocean fertilization. **Phytoplankton takes up CO2 and convert it to biomass**. Some of this biomass **sinks to the deep ocean**, thereby sequestering that carbon. This strategy relies on the ocean's "**biological carbon pump**".

**3 is not correct: Marine cloud brightening** (MCB) is a **solar radiation modification method**, proposed to offset the worst effects of global warming. MCB involves the **injection of salt spray into shallow marine clouds** to brighten them, **increasing their reflection of sunlight** and reducing the amount of heat absorbed by the water below. Thus, though **MCB** reduces the temperature but **does not lead to removal of the CO2** that is present in the atmosphere.

**4 is correct: Increasing the alkalinity of the ocean** helps to remove atmospheric $CO_2$ by **providing more chemical compounds in the seawater.** These compounds readily react with $CO_2$ and **convert it into stable bicarbonate ions.** This effectively pulls more CO2 from the atmosphere to maintain the equilibrium, thereby reducing ocean acidification. A **more alkaline ocean** acts as a **larger carbon sink**, absorbing more $CO_2$ from the air.

**36. (a)**

**Context**: **Kalaripayattu** has become a bone of contention ahead of the 38th edition of the **National Games** which is scheduled to commence from January 28 in **Uttarakhand**. The Indian Kalaripayattu Federation has accused the Indian Olympics Association (IOA) of "relegating" the martial art to the 'demonstration section' of the event.

**Statement 1 is correct:** Kalaripayattu is a **martial art technique** practiced in **Kerala**.

**Statement 2 is not correct:** Indian Olympics Association (IOA) has relegated the martial art form to the **'demonstration section'** of the event from the medal or competition section.

**Additional Information:** This indigenous cultural tradition is one of the most ancient martial traditions in the world. **'Kalari**,' signifying the **training centre** or the place where practice occurs, and **'Payattu**,' meaning the **fight** or rigorous physical practice.

- Kalaripayattu techniques encompass strikes, kicks, grappling, pre-set forms, weaponry, healing methods, and meditation.

**37. (d)**

**Pair 1 is correctly matched:** Polymetallic nodules are found in all the oceans and even in lakes. However, nodules of economic interest are more localized. They are **usually found in deep sea plains/ abyssal plains of the ocean floor**.

**Pair 2 is correctly matched:** Polymetallic sulphides generally form at hydrothermal vent sites, where hot, mineral-rich fluids from the Earth's mantle mix with cold ocean water, resulting in the precipitation of metal sulphides.

**Pair 3 is correctly matched: Cobalt-rich ferromanganese crusts** occur at shallower depths of <400 to about >5,000 meters **in areas of significant volcanic activity. The crusts grow on hard-rock substrates of volcanic origin by the precipitation of metals dissolved in seawater in areas of seamounts, ridges, plateaus and where prevailing currents prevent deposition of unconsolidated sediments and occupy** large areas on top of these topography highs.

**38. (b)**

**Pair 1 is correctly matched:** The government of Trinidad and Tobago recently declared a state of emergency following a deadly weekend of violence in the Caribbean dual-island nation.

**Pair 2 is not correctly matched:** Kursk is a city in western Russia. Recently, Ukrainian troops moved into Russia's southern Kursk border region.

**Pair 3 is correctly matched:** China had recently inaugurated Peru's **Chancay Port** describing it as the starting point for a 'new land-sea corridor' between China and Latin America.

**39. (b)**

**Pair 1 is correctly matched:** Kyiv is the capital city of Ukraine, located on the banks of the Dnieper River.

**Pair 2 is not correctly matched:** Maui is the second-largest island of Hawaii, located in Pacific Ocean.

**Pair 3 is correctly matched:** Dublin is the capital of Ireland.

**40. (b)**

**Vasant K. Vaidya** was an Indian independence activist, journalist, and writer. He was the **calligrapher of the Hindi version of the original** manuscript of the Indian **Constitution**. He used the **Devanagari script** and traditional Indian calligraphic techniques.

**41. (c)**

**Pair 1 is correctly matched:** The '**Gyan Bharatam Mission**' is for undertaking the "**survey, documentation and conservation" of India's manuscript heritage** lying with academic institutions, museums, libraries, and private collectors.

**Pair 2 is not correctly matched: SVAMITVA** stands for Survey of Villages and Mapping with Improvised Technology in Village Areas. It aims to provide a **'record of rights' to those having houses in villages, and issue them a property card.**

**Pair 3 is correctly matched: BHASHINI** aims to provide technology **translation services in 22 scheduled Indian languages**. BHASHINI aims to transcend language barriers, ensuring that every citizen can effortlessly access digital services in their own language. Using voice as a medium, BHASHINI has the potential to bridge language as well as the digital divide.

**42. (a)**

**Option (a) is the correct answer:** The rivers shown on the map are the Indus and their tributaries. The rivers labelled as 1, 2, 3 and 3 are described as follows:

1. **Satluj:** The river labelled 1 is the Satluj river. It originates in the 'Rakas tal' near Mansarovar in the Tiber. It flows almost parallel to the Indus for about 400 km before entering India and comes out of a gorge at Rupar. It passes through the Shipki La on the Himalayan ranges and enters the Punjab plans. It feeds the canal system of the Bhakra Nangal project.
2. **Indus:** The river labelled 2 is the Indus river. It originates from a glacier near Bokhar Chu in the Tibetan region in the Kailash Mountain range. After flowing in the northwest direction between the Ladakh and Zaskar ranges, it passes through Ladakh and Baltistan. It cuts across the Ladakh range, forming a spectacular gorge near Gilgit in Jammu and Kashmir. It enters Pakistan near Chilas in the Dardistan region.
3. **Chenab:** The river labelled 3 is the Chenab river. The Chenab is the largest tributary of the Indus. It is formed by two streams, the

Chandra and the Bhaga, which join at Tandi near Keylong in Himachal Pradesh. Hence, it is also known as Chandrabhaga. After traversing through the Indian territory, it enters into Pakistan.

4. **Jhelum:** The river labelled 4 is the Jhelum river. The Jhelum, an important tributary of the Indus, rises from a spring at Verinag, situated at the foot of the Pir Panjal in the southeastern part of the valley of Kashmir. It flows through Srinagar and the Wular Lake before entering Pakistan through a deep narrow gorge. It joins the Chenab near Jhang in Pakistan.

**Additional Information**

- **Beas:** The Beas is another important tributary of the Indus, originating from the Beas Kund near the Rohtang Pass. The river flows through the Kullu valley and forms gorges at Kati and Largi in the Dhaoladhar range. It enters the Punjab plains, where it meets the Satluj near Harike.
- **Ravi:** The Ravi is another important tributary of the Indus. It rises west of the Rohtang Pass in the Kullu hills of Himachal Pradesh and flows through the Chamba valley of the state. Before entering Pakistan and joining the Chenab near Sarai Sidhu, it drains the area lying between the southeastern part of the Pir Panjal and the Dhauladhar ranges.
- **Panjnad** is the name given to the five rivers of Punjab, namely the Satluj, the Beas, the Ravi, the Chenab and the Jhelum.

**43. (d)**

**Statement I is not correct:** The southwest monsoon approaches the landmass in two branches - the Arabian Sea branch and the Bay of Bengal branch. The **Arabian Sea Branch** is further **split into three branches:**

(i) Its **one branch** is obstructed by the Western Ghats. These winds climb the slopes of the Western Ghats and cause **rainfall on the windward side of the Sahyadris and Western Coastal Plain.**

(ii) **Another branch** of the Arabian Sea monsoon strikes the coast north of Mumbai. **Moving along the Narmada and Tapi river valleys**, these winds cause **rainfall in** extensive areas of **central India.** Thereafter, they enter the Ganga plains and mingle with the Bay of Bengal branch.

(iii) A **third branch** of this monsoon wind strikes the Saurashtra Peninsula and the Kachchh. It then passes over west Rajasthan and along the Aravalis, causing only a scanty rainfall. In Punjab and Haryana, it too joins the Bay of Bengal branch. These two branches, reinforced by each other, cause rains in the western Himalayas.

**Statement II is correct:** The **Bay of Bengal Branch** of the southwest monsoon strikes the coast of Myanmar and part of southeast Bangladesh. But the **Arakan Hills along the coast of Myanmar deflect a big portion of this branch towards the Indian subcontinent.** The monsoon, therefore, enters West Bengal and Bangladesh from the south and southeast instead of from the south-westerly direction.

**44. (b)**

**Pair 1 is not correctly matched:** The **caves at Ajanta** are excavated out of a vertical cliff above the left bank of the river Waghora **in the hills of Ajanta.** Ajanta Caves are located in the **Aurangabad district of Maharashtra. Maikala Range** is a mountain range in **Madhya Pradesh.** It runs in a north-south direction and forms the eastern base of the **Satpura Range.**

**Pair 2 is correctly matched:** In an important cultural achievement for India, "**Charaideo Moidams** – the Mound-Burial System of the Ahom Dynasty" from Assam has been officially inscribed on the UNESCO World Heritage List. It is **situated in the foothills of the Patkai Ranges** in eastern **Assam**. These burial mounds are considered sacred by the Tai-Ahom and reflect their unique funerary practices.

**Pair 3 is not correctly matched:** The **Rock Shelters of Bhimbetka** are in the foothills of the **Vindhyan Mountains** on the southern edge of the central Indian plateau. Within massive sandstone outcrops, above the comparatively dense forest, are five clusters of natural rock shelters, displaying paintings that appear to date from the Mesolithic Period right through to the historical period. **Satpura Range lies latitudinally below the Vindhyan Range.**

**45. (c)**

**Statement 1 is correct:** The earth's surface receives most of its energy in **short wavelengths**. The energy received by the earth is known as incoming solar radiation, which, in short, is termed **insolation**.

**Statement 2 is not correct:** Part of the **solar energy** that comes to Earth is **reflected back out to space** in the same **short wavelengths** in which it came to Earth. The fraction of solar energy that is reflected back to space is called the **albedo**.

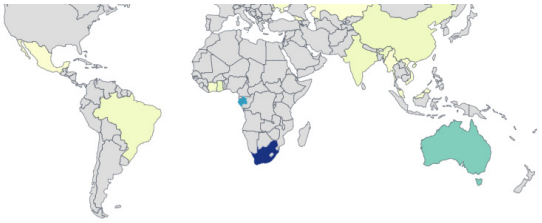
**Statement 3 is correct:** The insolation received by the earth is in short waveforms and heats up its surface. The **earth, after being heated** itself becomes a radiating body, and it **radiates energy** to the atmosphere **in the long waveform**. This energy heats up the atmosphere from below. This process is known as **terrestrial radiation.**

**Additional Information:**

The long wave radiation is absorbed by the atmospheric gases, particularly by carbon dioxide and the other green house gases. Thus, the atmosphere is indirectly heated by the Earth's radiation. The atmosphere, in turn, radiates and transmits heat to the space. Finally, the amount of heat received from the sun is returned to space, thereby maintaining constant temperature at the earth's surface and in the atmosphere

**46. (d)**

**Statement 1 is not correct:** The **leading countries for manganese ore production** are **South Africa, Gabon**, and **Australia**.



**Statement 2 is not correct:** Presently, **India** is one of the **major importers of manganese** ore in the world. However, **some Manganese production occurs domestically. Leading states in India** in terms of Manganese production are **Madhya Pradesh, Maharashtra** and **Odisha**.

**Additional Information:**

- Manganese (Mn) is essential to **iron and steel production** by virtue of its sulfur-fixing, deoxidizing, and alloying properties.
- Manganese is also a key component of certain widely used **aluminium alloys** and, in oxide form, **dry cell batteries.**

**47. (c)**

**Option (c) is the correct answer:** The **shortest possible sea route** between the Arabian Sea and the Mediterranean Sea will be as follows: Arabian Sea -> **Gulf of Aden -> Bab-el-Mandeb Strait -> Red Sea -> Suez Canal** -> Mediterranean Sea.


**Strait of Hormuz:** The Strait of Hormuz is a channel linking the Persian Gulf (west)

with the Gulf of Oman and the Arabian Sea (southeast).

**Gulf of Oman:** The Gulf of Oman is the northwest arm of the Arabian Sea, between the eastern portion (Oman) of the Arabian Peninsula to the southwest and Iran to the north.

**48. (d)**

**About Weathering:** Mechanical **disintegration** and chemical **decomposition of rocks** through the actions of various elements of weather and climate.

**About Erosion:** Erosion is a physical process in which soil, rock, and other surface materials are **removed from one location and transported to another.**

**Statement I is not correct:** Erosion cannot be significant if the rocks are not weathered. That means weathering aids mass erosion. **Though weathering aids erosion, it is not a pre-condition for erosion to take place.** Denudational processes like erosion and transportation are controlled by kinetic energy. The erosion and transportation of earth materials are brought about by wind, running water, glaciers, waves and groundwater.

**Statement II is correct: Erosion involves the acquisition and transportation of rock debris.** When massive rocks break into smaller fragments through weathering and any other process, erosional geomorphic agents like running water, groundwater, glaciers, wind and waves remove and transport it to other places depending upon the dynamics of each of these agents. Abrasion by rock debris carried by these geomorphic agents also aids greatly in erosion.

**49. (c)**

**Statement 1 is correct:** Article 217(1)(b) of the Indian Constitution states that a High Court judge can be removed in the **same manner and on the same grounds as a Supreme Court judge (under Article 124(4) and (5)).**

**Statement 2 is not correct: The Judges (Inquiry) Act, 1968, prescribes the procedure for the removal of judges. A removal motion must be signed by at least 100 members in the Lok Sabha or 50 members in the Rajya Sabha.** It must be signed by not less than one-fourth of the members of the respective House, not the provision for the removal of the Judges.

**Statement 3 is correct: The Speaker or Chairman may admit the motion or refuse** to admit it.

**Statement 4 is not correct: The investigation committee is formed BEFORE the House votes on removal.** If motion is admitted, then the Speaker/ Chairman is to constitute a three-member committee to investigate the charges. The committee should consist of (a) the chief justice or a judge of the Supreme Court, (b) a chief justice of a high court, and (c) a distinguished jurist. If the committee finds the judge to be guilty of misbehaviour or suffering from an incapacity, the House can take up the consideration of the motion.

**50. (c)**

**Statement 1 is correct:** As per Article 51A(i), every citizen must safeguard public property and abjure violence. If a research paper promotes violence or incites the destruction of public property, it can be restricted under Article 19(2), which allows limitations on free speech to maintain public order and prevent incitement to offenses.

Hence, this duty must be observed to ensure the right is exercised within constitutional restrictions.

**Statement 2 is not correct:** As per Article 51A(h), citizens must develop scientific temper, inquiry, and humanism. While it is an important duty for academic and research work, it is not a restriction under Article 19(2).

**Statement 3 is correct:** Article 51A(c) states that citizens must uphold and protect the sovereignty and integrity of India. Article 19(2) also allows restrictions on speech that threatens sovereignty and integrity. Hence, this duty must be observed to ensure the right is exercised within constitutional restrictions.

**51. (a)**

**Statement 1 is not correct:** Article 30(2) of Indian Constitution states that **State shall not, in granting aid to educational institutions, discriminate against any educational institution on the ground that it is under the management of a minority, whether based on religion or language.**

**Statement 2 is correct:** Article 28(1) of the Constitution states that **no religious instruction can be provided in any educational institution wholly maintained by state funds.** This ensures that public educational institutions funded by the government remain secular and do not impart religious teachings.

**Statement 3 is not correct:** Article 27 of Indian Constitution states that no person shall be compelled to pay any taxes, the proceeds of which are specifically appropriated in payment of expenses for the promotion or maintenance of **any particular religion or religious denomination**. This provision prohibits the State from favouring, patronising and supporting one religion over the other. This means that the taxes can be used for the promotion or maintenance of all religions.

**52. (a)**

**Statement 1 is correct: As per Article 3 of the Indian Constitution,** when a Bill to change the name of a State is introduced in Parliament, **the President must first refer it to the concerned State Legislature for its opinion.**

**Statement 2 is not correct: For changing the names of villages, towns/cities, railway stations etc.,** the proposals received from the respective State Government are considered in the Ministry of Home Affairs in consultation with the agencies concerned. Thereafter, if found appropriate, the Ministry conveys its 'No Objection' to the State Government concerned for issuing required Gazette Notification. The **State Government cannot unilaterally rename a city**; it must **consult the Central Government** via the Ministry of Home Affairs (MHA).

**53. (d)**

**Statement 1 is not correct: Article 93 of the Indian Constitution** states that the Lok Sabha shall choose a Speaker and a Deputy Speaker as soon as possible. However, the Constitution **does not specify any time limit (such as six months) for their election.**

**Statement 2 is not correct:The Deputy Speaker takes on the responsibilities of the Speaker's office when it becomes vacant and also presides over House sittings in the Speaker's absence,** exercising all the powers of the Speaker in both situations. Additionally, if the Speaker is unavailable, the Deputy Speaker oversees the joint sitting of both Houses of Parliament.

**Statement 3 is not correct:** A member holding office as Speaker or Deputy Speaker of the House of the People may at any time, by writing under his hand, address, if such member is the Speaker, to

the Deputy Speaker, and if such member is the Deputy Speaker, to the Speaker, resign his office.

**54. (c)**

**Option (c) is the correct answer:** In 2016, India adopted a Flexible Inflation Targeting Framework. The Finance Act of 2016 amended the Reserve Bank of India Act to provide price stability as the primary objective of monetary policy, Consumer Price Index (CPI) as the anchor, and an institutional framework in the form of a Monetary Policy Committee (MPC) to set the policy rate to achieve the inflation target.

Under the Flexible Inflation Targeting Framework adopted in India, the **inflation target is set by the Central Government in consultation with the Reserve Bank of India (RBI)**.

This target is specified **every five years** under the provisions of the **RBI Act, 1934** (as amended in 2016).

Is is to be noted that the **Monetary Policy Committee (MPC)** is responsible for **implementing monetary policy to achieve this target** but **does not set the target** itself.

**Additional information:**

- The current inflation target is to achieve a headline CPI inflation in the range of 4% ± 2%.

**55. (a)**

**Context:** The Government of India today notified the constitution of the National Turmeric Board. The National Turmeric Board will focus on the development and growth of turmeric and turmeric products in the country.

**Statement 1 is correct: India** is the **largest producer**, consumer and **exporter of turmeric in the world.**

**Statement 2 is not correct:** More than 30 varieties of Turmeric are grown in India and it is grown in over 20 states in the country. The **largest producing states of Turmeric** are **Maharashtra, Telangana, Karnataka and Tamil Nadu**. Kerala is not among the largest turmeric producing states in India.

**Statement 3 is not correct: National Turmeric Board**, which has been constituted recently, comes **under the administrative control of the Ministry of Commerce & Industry.**

**56. (a)**

**Option (a) is the correct answer:** "Nostro" and "Vostro" are Latin terms used to describe the same bank account but from different points of view.

**Vostro Account:** A vostro account is an **account that domestic banks hold for foreign banks in the former's domestic currency**.

**Nostro Account:** A nostro account is a bank account held in another country by a domestic bank, denominated in the currency of the overseas country.

Banks use these accounts to provide international banking services to their clients who have global banking needs.

A **foreign importer paying an Indian exporter in Indian Rupees through a foreign bank** will make use of a **Vostro Account.** In this case, the foreign importer deposits money in the foreign bank, which is then transferred to the Indian exporter in INR via the Vostro Account maintained in an Indian bank.

**57. (a)**

**1 is correct: Depreciation of Rupee** increases the cost of imported goods and raw materials. This, in turn, will lead to higher production costs and hence **increase in supply-side inflation.**

**2 is not correct:** A **decrease in Cash Reserve Ratio (CRR)** increases liquidity in the banking system. This may boost demand and **cause demand-side inflation.** It will not have an impact on supply-side inflation.

**3 is correct:** An **increase in Goods and Services Tax (GST)** on essential goods would directly lead to increases in prices of those goods. Thus, this will lead to an **increase in cost-push or supply-side inflation.**

**4 is not correct:** An **increase in government spending on welfare schemes** may boost the demand for goods and services. This is likely to **increase demand-side inflation**, but not supply-side inflation.

**5 is not correct:** A **decrease in income tax rates** would mean that people are left with more disposable income. This may boost demand for goods and services. Thus, it may lead to an **increase in demand-side inflation**, but not supply-side inflation.

**58. (d)**

**Statement 1 is not correct: Membership** of the BRICS New Development Bank (**NDB**) is **open to members of the United Nations.**

**Statement 2 is not correct:** As per the Agreement on the New Development Bank, the voting power of each member shall equal its subscribed shares in the capital stock of the Bank. When the NDB was established in 2014, the founding BRICS countries (Brazil, Russia, India, China, and South Africa) contributed equally to the bank's initial subscribed capital of $50 billion. Thus, the **founding members have equal voting shares in the NDB.** Later, when the NDB was expanded, newly joined members contributed smaller amounts of capital compared to the founding members. As a result, the **voting shares of new members are lesser as compared to the founding members.** Thus, **all members of the NDB, at present, do not have equal voting shares.**

**59. (c)**

**Statement 1 is correct:** Under the Flexible Inflation Targeting Framework, adopted in India in 2016, the **Consumer Price Index (CPI)** has been **adopted as the anchor for formulation of monetary policy** to achieve the objective of price stability (inflation target). The **Wholesale Price Index (WPI)** is used as a **GDP deflator** in specific sectors, such as manufacturing, because it measures inflation at the wholesale level, capturing input costs. Since the nominal estimates of GVA for different sectors are computed at basic price exclusive of taxes on products taxes, the WPI acts as an appropriate deflator.

**Statement 2 is correct:** The **Producer Price Index (PPI)** measures the average change over time in the **selling prices received by domestic producers** for their output. It only measures the price received by the producer **at the first commercial transaction**, and hence **excludes most of the indirect taxes.**

- **The WPI** measures the **price of a representative basket of goods bought and sold at the wholesale level.** The new series of WPI launched in India has **excluded most of the indirect taxes.** This makes the **WPI conceptually closer to the PPI.**
- The **Consumer Price Index (CPI)** is a measure of the average change over time in the **prices paid by consumers** for a representative basket of consumer goods and services. It **includes all the indirect taxes** that are paid by the final consumer. Thus, **conceptually**, the **CPI deviates far away from the PPI.**

**60. (c)**

**About Edge computing:** Edge computing is the process of bringing information

storage and computing abilities closer to the devices that produce that information and the users who consume it. Traditionally, applications have transmitted data from smart devices like sensors and smartphones to a central data center for processing.

**Statement 1 is correct:** Edge computing reduces latency, meaning it lowers response time by doing the work close to the source instead of sending it to the more distant cloud and then waiting for a response.

**Statement 2 is correct**: Edge computing can enhance data security and privacy because sensitive data can be processed locally, minimizing the need to transfer it to central cloud servers. This reduces the risk of exposure during transmission.

**61. (c)**

**Option (c) is the correct answer:** Bananas produce ethylene gas as they ripen. Ethylene is a plant hormone that triggers and accelerates the ripening process. When a banana is sealed in a bag, the ethylene gas it produces becomes trapped, increasing the concentration of the gas around the fruit. This higher concentration of ethylene causes the banana to ripen more quickly.

**62. (b)**

**Pair 1 is correctly matched: India's first indigenously developed New Generation AntiRadiation Missile** (NGARM/ RudraM-I) was successfully flight tested recently in Chandan Range, Rajasthan. The **Rudram-1 missile** is integrated with the IAF's Sukhoi-30MKI fighter jets, serving as a potent platform for its deployment. Equipped with INS-GPS navigation and a Passive Homing Head, the missile ensures precise targeting of radiation-emitting sources. This capability is pivotal for the Suppression of Enemy Air Defence (SEAD) missions, enabling the IAF to neutralise enemy radars and communication systems from extended ranges.

**Pair 2 is correctly matched:** Recently, India launched its **first reusable hybrid rocket 'RHUMI- 1'**, developed by the Tamil Nadu-based start-up Space Zone India with Martin Group. The RHUMI Rocket is equipped with a generic-fuel-based hybrid motor and electrically triggered parachute deployer, RHUMI is 100% pyrotechnic-free and 0% TNT.

**Pair 3 is not correctly matched:** In a boost to indigenous missile manufacturing capabilities, the Indian Air Force has recently given clearance to public sector firm Bharat Dynamics Limited for the production of 200 **Astra Mark 1 air-to-air missiles.** Astra Mark 1 is **not India's first indigenous long-range hypersonic missile.**

**63. (b)**

About organ-on-chip: An organ-on-chip is a small device designed to recreate the dynamic functions of some human organ in a controlled microenvironment.

**Statement 1 and 2 are correct:** They are expected to be better than the cell cultures and animal models researchers currently use at testing the effects of a drug. The results from the use of these devices would in turn provide a better understanding of the drug-candidate's efficacy and toxicity, reduce the use of animals. They can use patient-derived cells to create chips tailored to individual responses, enabling personalized treatment.

**Statement 3 is not correct:** Organ-on-chips do have some application in regenerative medicine, but they themselves enable self-regeneration or long term preservation of organs or tissues.

**Statement 4 is correct:** Organ-on-Chip models are also used to study how pathogens like bacteria and viruses

interact with human organs, helping in the development of treatments for infections.

**64. (d)**

**Statement I is correct:** Methanol can be used as a low-carbon alternative fuel in internal combustion engines, particularly in blends with gasoline or directly as a fuel in modified engines. Blending of 15% methanol in gasoline can result in at least 15% reduction in the import of gasoline/ crude oil. In addition, this would bring down GHG emissions by 20% in terms of particulate matter, NOx, and SOx, thereby improving the urban air quality.

**Statement II is correct:** Ethanol (not methanol) is primarily produced through the fermentation of starch-rich crops. Methanol is produced from high ash coal, agricultural residue, CO2 from thermal power plants and natural gas.

**Statement III is correct:** Methanol has slightly lower in energy content than petrol and diesel

**65. (a)**

**About neutrino:** Neutrinos are tiny particles, very similar to electrons, but without any electric charge. They are one of the fundamental particles the universe is built of, and are the second most abundant subatomic particles after photons. Although neutrinos are everywhere, not each one of them is important to study. Scientists are interested in examining super-fast, high-energy neutrinos that have come from far, far away. Such neutrinos are rare and mostly originate from exotic events such as supernovae, gamma-ray bursts or colliding stars.

**Option (a) is the correct answer:** High-energy neutrinos, however, are not just rare but also extremely difficult to detect. One reason is that neutrinos barely interact with anything — despite billions of neutrinos around us, an average of only about one of them will interact with a person's body during a lifetime. One of the major challenges in detecting neutrinos is minimizing interference from background radiation, such as cosmic rays and other high-energy particles that constantly bombard the Earth's surface. Building observatories deep underground or underwater provides a natural shield against cosmic rays and background radiation.

**66. (c)**

**Statement 1 is correct:** The second-generation NavIC satellites (NVS series) are designed to enhance accuracy in regional services, not to expand coverage to a global scale.

**Statement 2 is correct:** The second generation satellites will send signals in a third frequency, L1, besides the L5 and S frequency signals that the existing satellites provide, increasing interoperability with other satellite-based navigation systems. India is not the first country to provide navigation services in the L1 band, in fact, the L1 frequency is among the most commonly used in the Global Positioning System (GPS)

**Statement 3 is correct:** The satellites will have a Rubidium atomic clock onboard, a significant technology developed by India. This development aims to improve timing accuracy and reduce dependence on imported technologies.

**67. (d)**

**Option D is the correct answer**

**Sucheta Kripalani:** She was born in Ambala in 1908, studied at Indraprastha College, Delhi. She was active in the **Quit India Movement (1942)** and had a notable political career in **Uttar Pradesh.** She served as India's **first female Chief**

**Minister (1963-1967)** and held key roles, including Minister of Labour, Community Development, and Industry (1960-1963).

**Vijaya Lakshmi Pandit:** She was born as Swarup Kumari Nehru on 18 August 1900 to the Nehru family. She led the **Indian delegation to the United Nations between 1946–48 and 1952–53.** Thereafter served as an ambassador to Moscow, Mexico and Washington. In 1953 she became the **first woman president of the UN General Assembly.** A year later, she concurrently served as an ambassador to England and Ireland. She was the India's first Ambassador to the Soviet Union as well.

**68. (b)**

**Statement 1 is correct: Nathpanthis, Siddhacharas and Yogis advocated renunciation of the world.** To them the path to salvation lay in meditation on the formless Ultimate Reality and the realisation of oneness with it.

**Statement 2 is correct: The twelfth century witnessed the emergence of a new movement in Karnataka, led by Basavanna (1106-68).** His followers were known as Virashaivas (heroes of Shiva) or Lingayats (wearers of the linga). **Lingayats believe that on death the devotee will be united with Shiva and will not return to this world. Therefore they do not practise funerary rites such as cremation, prescribed in the Dharmashastras. Instead, they ceremonially bury their dead. The Lingayats challenged the idea of caste** and the "pollution" attributed to certain groups by Brahmana.

**Statement 3 is not correct:** The Warkari sect is a devotional movement in Maharashtra that venerates Lord Vithoba (Vitthal). **Their primary focus is on the worship of Vithoba, not Shiva in the form of a lingam.**

**69. (b)**

**Option B is correct:** Maharani Ahilyabai Holkar (1725–1795) was the ruler of the Holkar dynasty of Indore in the 18th century. She is renowned for her patronage of temples and dharmashalas across India. She constructed the Vishnupad Temple in Gaya and is also credited with the renovation of the Kashi Vishwanath Temple in Varanasi.

**70. (b)**

**Option B is correct: Diamond Triangle of Odisha comprising three places, namely, Ratnagiri, Udaygiri and Lalitgiri.** The places bear the name of 'Diamond Triangle' not because of their location, although present in a perfect triangular pattern in the map, but because of the origin of Vajrajana sect of Buddhism.

Actually, in Sanskrit diamond is referred as Vajramani and hence Vajrajana is called as diamond vehicle sect.

**Historically, the ancient texts of Tibet, whose people follow Vajrajana Buddhism even today, mention these places as the places of origin of Vajrajana (Diamond Vehicle Sect) and hence the name ' Diamond Triangle of Odisha'.**

**71. (a)**

**Option A is correct**

**Khila (B - Untilled land):** In the Gupta period, **Khila** referred to **untilled land**, which was not under cultivation. It was often granted for agricultural purposes to be developed into productive land.

**2. Gapata Sarah (A - Pastoral land)**

**Gapata Sarah** referred to **pasture or grazing land** used for rearing cattle and livestock.

It was essential for maintaining the agrarian economy.

**3. Vasti (C - Habitat land)**

**Vasti** meant **settled or habitat land**, where people lived and established communities.

It was an important term in land revenue administration.

**72. (a)**

**Pair 1 is not correctly matched: The Munda Rebellion (1899–1900), It led by Birsa Munda,** took place in the **Chotanagpur Plateau.** A significant outcome of this uprising was the **enactment of the Chotanagpur Tenancy Act in 1908.** The Chhotanagpur Tenancy Act of 1908 provided some land ownership rights to the people and banned bonded labour of the tribe.

**Pair 2 is not correctly matched:** The Uprising of the Bhils (1818-1831), Bhils were largely concentrated in Khandesh (present day Maharashtra & Gujarat). Khandesh came under British occupation in 1818. The Bhils considered them as outsiders. On the instigation of Trimbakji, rebel minister of Baji Rao II they revolted against the Britishers.

**Pair 3 is correctly matched:** The **Santhal Rebellion (1855–1857)** was led by the Santhal community against British colonial authority in the Rajmahal Hills. Following the rebellion, the British administration carved out a **separate district called Santhal Pargana. Sidhu and Kanu** were leading Santhal rebel leaders.

**73. (a)**

**Statement 1 is correct: In February 1664, Chhatrapati Shivaji Maharaj led a naval expedition to the strategic port town of Basrur (also spelled Basruru) in present-day Karnataka.** This was his first naval expedition. The Maratha navy attacked the Portuguese-held port, decisively defeating them.

**Statement 2 is not correct: The Sanskrit treatise "Budhbhushanam" is attributed to Chhatrapati Sambhaji Maharaj,** the son of Shivaji Maharaj, not to Shivaji himself. In this work, Sambhaji discusses principles of governance and military tactics, providing insights into statecraft and warfare.

**74. (c)**

All the pairs given above are correctly matched: In Jain philosophy, the concept of Tattvas (fundamental principles) explains the interaction of the soul with karma and the path to liberation.

- Asrava: Influx of Karmic matter towards the soul
- Samvara: Stoppage of influx of Karmic matter
- Nirjara : Removal of Karmic matter from soul

**75. (a)**

**About Sustainable Agriculture:** Sustainable agriculture is farming in such a way to **protect the environment**, **aid and expand natural resources** and make the **best use of nonrenewable resources.**

**Statement 1 is correct: Enhancing biodiversity around agricultural fields** to promote ecosystem services is consistent with the principles of sustainable agriculture. Biodiversity **helps improve pollination, pest control, soil health, and overall ecosystem stability**, which **reduces dependency on external inputs** like synthetic pesticides and fertilisers.

**Statement 2 is correct: Dhaincha, Cowpea, and Sunhemp** are the three main varieties of **green manure.** The incorporation of green plant residues as green manure leads to the improvement of soil fertility. This is a practice in line with sustainable agriculture as it **discourages the use of chemical fertilizers.**

**Statement 3 is not correct:** Frequent ploughing is **not consistent** with sustainable agriculture. Frequent ploughing can lead to issues like soil **erosion**, loss of **soil organic matter**, and disruption of beneficial soil organisms like earthworms and microbes. **Sustainable agriculture emphasises minimum tillage or no-till farming** to protect soil structure and conserve moisture.

**76. (b)**

**Context: India recently signed the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement.** BBNJ is also known as '**High Seas Treaty**'. 'High Seas' are areas beyond the national jurisdiction of a state. They are known as **global common oceans** and are open to all for internationally lawful purposes such as navigation, overflight, laying submarine cables and pipelines, etc.

**Statement 1 is not correct:** The High Seas Treaty aims to **address the growing concerns over the long-term protection of marine biodiversity** in the high seas. However, it has **no provisions** that **allow extension of EEZ by establishing Marine Protected Areas beyond 200 nautical miles.**

**Statement 2 is correct:** The High Seas Treaty **sets precise mechanisms for the sustainable use of marine biological diversity** through international cooperation and coordination. **Parties** to the treaty are **mandated to ensure fair and equitable sharing of benefits** derived from marine genetic resources.

**77. (a)**

**Polylactic acid (PLA)** is an **eco-friendly bioplastic** which can be **produced by fermentation of renewable resources**, primarily **lactic acid**. Since lactic acid is a non-toxic component which exists in human metabolism, PLA is safe polyester for human-related applications. Corn, sugarcane, cassava etc can also be used for producing bioplastics.

**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.

**78. (c)**

**About ecological pyramids:** They are **graphical representations** of the **number** of organisms, **biomass** or **bioproductivity at each trophic level in an ecosystem.** The **pyramid of biomass** shows the **amount of organic matter present at a particular trophic level.**

**Statement-I is correct:** The **pyramid of biomass in the sea is generally inverted** because the **amount of biomass is least at the base of the pyramid** and the amount of biomass is **maximum at the apex** of the pyramid.

**Statement-II is not correct:** A pyramid of biomass is inverted because the **primary producers (phytoplankton) have a significantly lower biomass compared to** the **primary** consumers (like zooplankton), as well as **tertiary consumers (large fishes)**. The **phytoplankton reproduce and die quickly, resulting in less total biomass at the base** of the pyramid compared to higher trophic levels.

**79. (d)**

**Statement 1 is correct: Seaweeds** are **macroscopic algae** that primarily grow in **shallow marine waters**. They have high nutritional content and are **rich in** various **vitamins and healthy omega-3 fatty acids**. Seaweeds are abundant along all the coastal areas of India.

**Statement 2 is correct:** Seagrasses are **flowering plants** which are found in **sea beds and ocean floors**. They have the ability to **sequester carbon**, nurture fish communities and **support marine mammals** such as sea cows or dugongs.

**Statement 3 is correct: Kelps** are a **subgroup of brown seaweed** that **grow in cold nutrient-rich waters**. Kelps create **forest-like habitats** and **foster diverse amounts of life**, including sea snails, lobsters, various species of fish, etc. Kelps are predominantly cool water species but they can **also** be **found at tropical latitudes**.

**80. (d)**

**Option (d) is the correct answer.**

**About Coral reefs:** They are **large underwater structures** composed of the **skeletons of colonial marine invertebrates called corals**. Corals are a **symbiotic association** of tiny animal **polyps** with algae called **zooxanthellae**.

Because of their **hard and spiky structure**, **coral reefs can reduce wave energy by about 90%**, mainly through **wave breaking and frictional dissipation processes**. Coral reef structure **buffers shorelines against waves, storms, and floods**, thereby aiding in **preventing erosion**. When reefs are damaged or destroyed, the absence of this natural barrier can increase the damage to coastal communities from normal wave action and violent storms.

**81. (c)**

**Statement 1 is correct:** The **UNCCD** is the **only legally binding framework** set up in 1994 **to address desertification and the effects of drought**. It is a multilateral commitment that aims to protect and restore land and mitigate the impact of land degradation.

**Statement 2 is not correct:** The **UNCCD defines desertification as** a **gradual process of soil productivity loss** and the thinning out of the vegetative cover **because of human activities and climatic variations** such as prolonged droughts and floods. Thus, **desertification is not the natural expansion of existing deserts**; rather it is the **degradation of land in arid, semi-arid, and dry sub-humid areas**.

**Statement 3 is correct: IDRA** was launched **at** the **UNFCCC COP27**, by the leaders of Spain and Senegal. It **drives action against droughts** in the face of global warming, acknowledging that humanity is only as resilient to drought and climate change as our land is. The **IDRA secretariat is hosted by the UNCCD**.

**82. (c)**

**About Nitrous oxide (N2O):** It is a **long-lived, potent greenhouse gas** that has **been accumulating in the atmosphere since the pre-industrial era**. **Though N2O** is much **less abundant** in the atmosphere than carbon dioxide or methane, but its **global warming potential is nearly 300 times that of carbon dioxide** over a 100-year time scale. N2O is also a **strong ozone-depleting substance**.

**Statement-I is correct: Agriculture contributes around 72 percent of N2O emissions in India**. Majority of agricultural emissions result **from application of nitrogenous fertilizers** such as **urea**. Such fertilisers can lead to excess nitrogen in the soil that is converted into nitrous oxide gas by bacteria under favorable conditions (warm temperatures and moist soil). In addition, application of farm yard manure, green manure and crop residues also contribute towards N2O emissions.

**Statement-II is not correct:** Anthropogenic **emissions of N2O** do **not** come **from application of pesticides and herbicides**

**but from nitrogenous fertilizers** and animal waste to farmland and pastures.

**83. (b)**

**Pair 1 is not correctly matched: PRAGATI (Pro-Active Governance and Timely Implementation)** is a multi-purpose and multi-modal platform that is aimed at addressing common man's grievances, and simultaneously monitoring and reviewing important programmes and projects of the Government of India as well as projects flagged by State Governments. PRAGATI platform uniquely bundles three latest technologies: Digital data management, video-conferencing and geo-spatial technology.

**Pair 2 is correctly matched: Entity Locker** tool was introduced by the Government to help the organizations in storing the users government documents on a secure, cloud-based platform. Entity Locker is an initiative by India's Ministry of Electronics and Information Technology (MEITy). It can be used by any organisation registered in India.

**Pair 3 is correctly matched:** The focus of GI MeghRaj initiative is to accelerate delivery of e-services in the country while optimizing ICT spending of the Government. MeitY has launched several initiatives to proliferate the Cloud adoption across the various departments and agencies of the government and streamline the processes involved.

**84. (c)**

**Statement 1 is correct:** The Siddha system of medicine is mainly practised in the Southern part of India. It is one of the earliest traditional medicine systems in the world which treats not only the body but also the mind and the soul. The word Siddha has its origin in the Tamil word Siddhi which means "an object to be attained" or "perfection" or "heavenly bliss". The roots of this system are intertwined with the **culture of ancient Tamil civilization.**

**Statement 2 is correct:** "**Sowa-Rigpa**," commonly known as Amchi medicine, stands as the **traditional medicinal system in various Himalayan regions**. Translating to 'Science of healing' or 'Knowledge of healing' in the Bhoti language, the practitioners are referred to as Amchis. **Sowa-Rigpa traces its origins to Bhagwan Buddha in India, with the foundational textbook (rGyud-bZi/ Chatush Tantra) first taught near Bodh Gaya in Sudarshan Van**. While rooted in Indian Ayurvedic fundamentals like Panch Maha Bhuta, Tri Dosh, and Sapt Dhatu, the philosophical underpinnings of Sowa-Rigpa are steeped in Buddhist principles.

**85. (c)**

**Statement 1 is correct: Kho-kho is an ancient Indian game**, possibly derived from the different strategies and tactics of the **war in Kurukshetra** as described in the **Mahabharata**. The chariot fight during the war and the zigzag pathways followed by the retreating soldiers show similarity with kho-kho.The **tactics used by Abhimanyu** to fight the defensive circle **is similar to the game play of Kho-kho.**

**Statement 2 is correct:** Recently, **India won the Kho Kho world cup 2025 for both Men and Women**.

The Indian men's team beat Nepal 54-36 in the final to win the inaugural (first ever) **Kho Kho World Cup title.**

- Indian women's team wins with a dominant 78-40 victory over Nepal.

**86. (a)**

**1 and 3 are correct:** Iran and the Russian Federation are members of both SCO and BRICS.

- About Shanghai Cooperation Organisation (SCO): It is a permanent intergovernmental international organisation, comprising 9 Member States, namely the Republic of India, the Islamic Republic of Iran, the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, and the Republic of Uzbekistan.
- **About BRICS :** It includes 11 countries - Brazil, China, Egypt, Ethiopia, India, Indonesia, Iran, Russian Federation, Saudi Arabia, South Africa, United Arab Emirates.

**87. (b)**

**Row 1 is correctly matched:** Garuda Shakti is an exercise by the armies of India and Indonesia.

**Row 2 is not correctly matched:** Exercise **Antariksha Abhyas** is a **first of its kind exercise** being conducted and is expected to help secure national strategic objectives in space and integrate **India's space capability in military operations**. It will have **participants from the Defence Space Agency** and its allied units along with personnel from the **Army, Navy and the Air Force**.

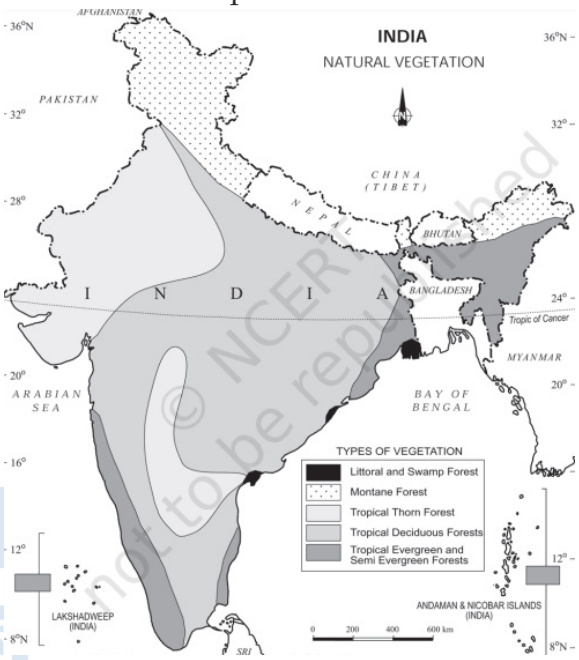
**Row 3 is correctly matched:** The Indian **Army** contingent recently conducted the 15th edition of **India- USA** joint Special Forces Exercise **VAJRA PRAHAR**.

- The aim of Exercise is to promote military cooperation between India and the US through enhancement of interoperability, jointness and mutual exchange of special operations tactics.

**88. (b)**

**Option (b) is the correct answer:** On the basis of certain common features such as predominant vegetation type and climatic regions, Indian forests can be divided into five groups: Tropical Evergreen & Semi-Evergreen forests, Tropical Deciduous forests, Tropical Thorn forests, Montane forests, and Littoral & Swamp forests.

The distribution of these types of forests is shown in the map below:




**Tropical Deciduous Forests:** They spread over regions that receive rainfall between 70-200 cm. On the basis of the availability of water, these forests are further divided into moist and dry deciduous.

**(i) Moist deciduous forests** are more pronounced in the regions which 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.

**(ii) Dry deciduous forests** cover vast areas of the country, where rainfall ranges between 70 -100 cm. On the wetter margins, it has a transition to the moist deciduous, while on the drier margins to thorn forests. These forests are found in **rainier areas of the Peninsula** and the plains of Uttar Pradesh and Bihar.

**89. (a)**

**Statement I is correct:** Any fluid, such as air or water, moving on the earth's surface

from the equator to poleward appears to have deflected from its original path of motion. This effect is known as the **Coriolis Effect**. In order to account for this effect, scientists have invented an **imaginary force called Coriolis Force.** This force acts and **deflects** the objects **towards the right in the northern hemisphere** and towards the **left in the southern hemisphere.**

**Statement II is correct and provides the correct explanation for Statement I:** If the Earth did not rotate on its axis, the atmosphere would only circulate between the poles and the equator in a simple back-and-forth pattern. Because the **Earth rotates on its axis**, circulating air is **deflected toward the right in the Northern Hemisphere** and toward the **left in the Southern Hemisphere**. This deflection is called the **Coriolis effect.**

**90. (d)**

**Statement I is not correct:** Sea surface **salinity in equatorial regions is lower** as compared to that in **tropical regions.**

**Statement II is correct:** There exists a positive correlation between the rate of evaporation and amount of salinity. **Greater the rate of evaporation, higher is the salinity of oceans and vice versa.**

**Factors affecting the distribution of salinity in the ocean:** Evaporation, Precipitation, Direction of Wind, Influx of Fresh Water, and Ocean Currents.

- **Evaporation:** There exists a positive correlation between the rate of evaporation and amount of salinity. Greater is the rate of evaporation, higher is the salinity of oceans and vice versa. Due to evaporation, water content is lost and salts are left behind, which in turn increases salinity.

Both equator and tropics have higher rate of evaporation. But, **as compared to equator, tropical regions have higher salinity due to comparatively low humidity ratio near the tropics.** Equatorial regions have high relative humidity which reduces the salinity of these regions compared to tropical regions.

- **Precipitation:** There exists a negative correlation between precipitation and the salinity of the oceans. Higher the precipitation, the lower is the salinity and vice versa.

The **equatorial regions receive high rainfall throughout the year, thus have lower salinity compared to** the regions of lower rainfall in **subtropical** high-pressure belts.

**91. (b)**

**Context:** Union Budget 2025-26 has announced to set up a Makhana Board in Bihar.

**Statement 1 is not correct:** *Makhana* is also known as fox nuts or lotus seeds. It is the **dried edible seed of the water lily** or gorgon plant (Euryale ferox), which is found in freshwater ponds.

**Statement 2 is correct: Bihar** accounts for approximately **90% of India's makhana production.**

**Additional information:**

- Mithila Makhana, which is produced in Bihar, has a Geographical Indication (GI) tag.

**92. (c)**

**Statement 1 is correct: Gulf of Mexico Loop Current** is a warm ocean current that flows through the Gulf of Mexico and into the Atlantic Ocean. The current originates when warm water from the **Caribbean Sea** enters the Gulf of Mexico through the **Yucatán Channel** (between Mexico's Yucatán Peninsula and Cuba). It loops northward into the central Gulf of Mexico. Then, it exits through the **Straits of Florida** (between the Florida Keys and Cuba), where it becomes the **Florida Current** and eventually merges with the **Gulf Stream.**

- It is a **warm-water current** that brings warm Caribbean water northward between the Yucatan Peninsula and Cuba and into the Gulf. As a result, it plays a significant role in regional weather patterns and the development of tropical cyclones.
- **Regional Weather Patterns:** As a heat transporter, the Loop Current affects regional and global climate by redistributing warm water and influencing weather patterns.
- **Tropical Cyclones:** The Loop Current's warm waters can act as a fuel source for hurricanes. When a storm passes over the current or its warm eddies, it can rapidly intensify due to the high heat energy.


**Statement 2 is correct:** The Panama Canal's water dynamics have a minimal impact on the salinity and circulation of the large ocean basins it connects due to the relatively small volume of water it exchanges compared to the vastness of the Atlantic and Pacific Oceans.

**93. (a)**

**About Arctic and Antarctic:** Geographically, the Arctic is an Ocean covered by a thin layer of perennial sea ice and surrounded by land. On the other hand, Antarctica is a continent, covered by a very thick ice cap and surrounded by a rim of sea ice and the Southern Ocean.

**Statement 1 is correct and statement 3 explains it correctly:** The Arctic Ocean is deep and is closely tied to surrounding climate systems. Thus, it is more sensitive to changes in climate than Antarctica. In recent years, Arctic sea ice has been melting at an accelerated rate (a phenomenon known as Arctic Amplification). This melting is driven by a reduction in surface

albedo. When the ice reflects less sunlight, more solar radiation is absorbed by the darker ocean surface. This creates a positive feedback loop, where the warmer ocean surface further accelerates ice melt and increases Arctic air temperatures. As a result, the Arctic has been warming faster as compared to the Antarctic in recent decades.

**Statement 2 is correct and statement 4 explains it correctly:** Ozone depletion is more severe in the Antarctic compared to the Arctic. The severe depletion of the Antarctic ozone layer known as the "ozone hole" occurs because of the special atmospheric and chemical conditions that exist in the Antarctic and nowhere else on the globe. The very low winter temperatures in the Antarctic stratosphere cause polar stratospheric clouds (PSCs) to form. Special reactions that occur on PSCs, combined with the relative isolation of polar stratospheric air, allow chlorine and bromine reactions to produce the ozone hole in Antarctic springtime.

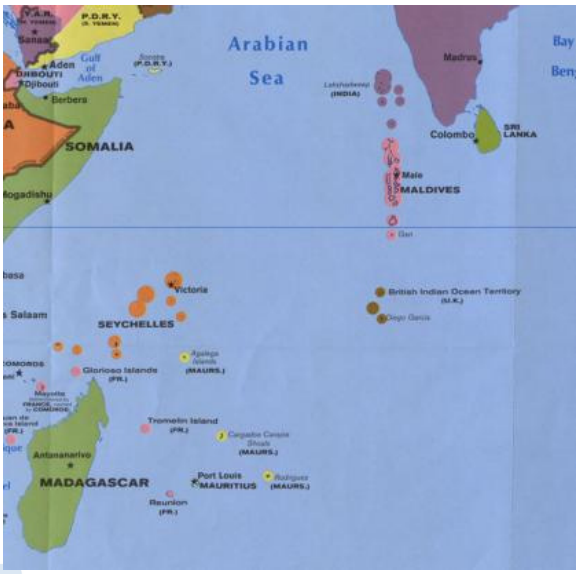
**94. (a)**

**Option (a) is the correct answer:** The **correct sequence** of the given islands **from north to south** is as: Maldives -> Seychelles -> Mauritius.

**Maldives:** The Maldive Islands are located in the Indian Ocean between **7°06'N to 00° 45' S latitudes** and 72°13'E to 73°45' Longitudes.

**Seychelles:** It is an island in the Indian Ocean, situated between **latitudes 4° and 11° S** and longitudes 46° and 56° E. The major islands of Seychelles are located about 1,000 miles (1,600 km) east of Kenya and about 700 miles (1,100 km) northeast of Madagascar.

**Mauritius:** It is an Indian Ocean island, situated between **latitudes 19°50' south and 20°30' south** and between longitudes 57°18' east and 57°46' east.



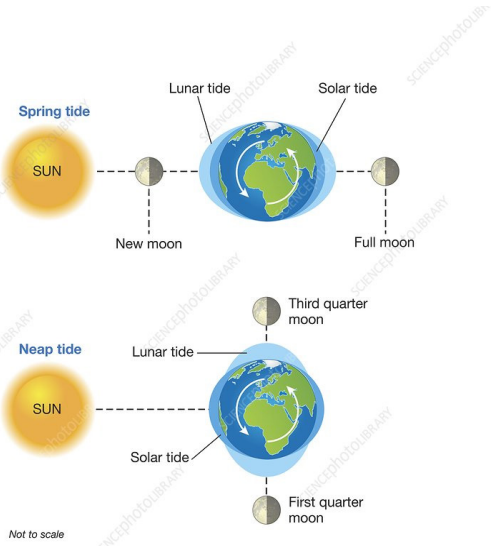

**95. (c)**

**Option (c) is the correct answer:** Twice a month when the **Earth, Sun, and Moon line up**, their **gravitational power combines to make exceptionally high tides** where the bulges occur, called spring tides, as well as very low tides where the water has been displaced. Spring tides always happen when the Moon is at the full or new phase, which is when the Sun, Moon and Earth are in alignment.

- **Both the alignments given** in the question will cause **Spring Tides.** Thus, the **height of high tides will be higher than usual in both alignments.**

**Additional Information:**

- **Neap Tides:** Neap tides occur around the first and last quarter phase of the Moon when the Moon's orbit around Earth brings it perpendicular to the Sun. In such alignment, the Sun's gravitational pull works against the Moon's gravitational tug and partially cancels it out, creating the moderate tides called neap tides.




**96. (b)**

**Statement 1 is not correct:** A key rule of the multilateral trade system is that reductions in trade barriers should be applied, on a Most-Favoured Nation (MFN) basis, to all WTO members. This means that no WTO member should be discriminated against by another member's trade regime. However, **Free Trade Agreements (FTAs) are an important exception to the rule of Mos-Favoured Nation**. Under FTAs reductions in trade barriers apply only to the parties to the agreement. This exception is allowed under Article XXIV of the General Agreement on Tariffs and Trade (GATT) for trade in goods, in Article V of the General Agreement on Trade in Services (GATS) for Trade in Services and in the Enabling Clause for developing countries.

**Statement 2 is correct:** As per the WTO Rules, the **FTAs must be consistent with the WTO rules** governing such agreements, which require that:

- Parties to a **FTA must have established free trade on substantially all trade within the regional area**, and
- Parties cannot raise their tariffs or other barriers against countries outside the agreement.

**97. (d)**

**Statement I is not correct:** Expansionary monetary policy involves actions such as reducing interest rates or increasing money supply to stimulate economic growth. However, this typically leads to higher inflation and lower real interest rates. When real interest rates are low, foreign investors may withdraw their investments due to reduced returns, leading to capital outflows. This can cause further depreciation of the Rupee.

**Statement II is correct:** Expansionary monetary policy reduces borrowing costs by lowering interest rates, which encourages businesses to invest more in the economy.

**98. (c)**

**Option (c) is the correct answer:** In India, there is a dual GST system, with the Centre and States simultaneously levying it on a common tax base. The types of GST levied on different types of transactions within India are as follows:

- **Intra-State Transactions:** On every **intra-State supply** of goods and/or services, the Center levies the Central GST (CGST), and simultaneously, the State levies the State GST (SGST).
- **Inter-State Transactions:** On every **inter-State supply** of goods and/or services, only the Center levies the Integrated GST (IGST).

Since GST is a destination-based tax, the **IGST**, levied and collected by the Center, is distributed between the Center and the destination state (Madhya Pradesh in this case).

**99. (a)**

**Statement 1 is not correct: Article 350B of the Indian Constitution provides for a Special Officer for Linguistic Minorities, not religious minorities.** The **Special Officer for Linguistic Minorities,**

is appointed by the President of India to safeguard the rights of linguistic minorities.

**Statement 2 is correct: Article 30(1)** of the Constitution of India provides for linguistic and religious minorities a fundamental right to **establish and administer educational institutions of their choice.**

**Statement 3 is not correct:** As per Article 15(5), the State can make special provisions for the advancement of SCs/STs, including reservations in educational institutions. **However, minority institutions under Article 30(1) are exempt from such provisions, meaning they are not required to provide reservations for SCs/STs.**

**100.(d)**

**Statement I is correct:** During the President's rule, the powers of the Legislature of the State are exercisable by or under the authority of Parliament, and the state legislature can not enact any law.

**Statement II is not correct:** During the operation of the President's Rule (Article 356), the President may dissolve the State Legislative Assembly or put it under suspension and authorise the Parliament to make laws on behalf of the State Legislature. It is not automatically dissolved.

**Statement III is not correct:** During the imposition of Article 356, the President can assume to himself all or any of the functions of the Government of the State and all or any of the powers vested in or exercisable by the Governor or any body or authority in the State **other than the Legislature of the State.**

**Hence,** Neither Statement-II nor Statement-III is correct.

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