

CHAYAN GS 2024 TEST – 4 COMPREHENSIVE MOCK TEST 4

Answers (25 MAY 2024)

Q1. Answer: (b)

Foreign direct investments (FDI) is prohibited in the following sectors:

- a) Lottery Business including Government/private lottery, online lotteries, etc.
- b) Gambling and Betting including casinos etc.
- c) Chit funds
- d) Nidhi company
- e) Trading in Transferable Development Rights (TDRs)
- f) Real Estate Business or Construction of Farm Houses 'Real estate business' shall not include development of townships, construction of residential /commercial premises, roads or bridges and Real Estate Investment Trusts (REITs) registered and regulated under the SEBI (REITs) Regulations 2014.
- g) Manufacturing of cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes
- h) Activities/sectors not open to private sector investment e.g.(I) Atomic Energy and (II) Railway operations .

Foreign technology collaboration in any form including licensing for franchise, trademark, brand name, management contract is also prohibited for Lottery Business, Gambling and Betting activities.

100% FDI is allowed in the Mining and Exploration of metal and non-metal ores sector.

Q2. Answer- (a)

The Preamble to any Constitution is a brief introductory statement that conveys the guiding principles of the document. The values expressed in the Preamble are expressed as objectives of the Constitution. These are: sovereignty, socialism, secularism, democracy, republican character of Indian State, justice, liberty, equality, fraternity, human dignity and the unity and integrity of the Nation

Statement 1 is correct: The Preamble to the Indian Constitution includes unity and integrity of the nation as a major objective. It also stipulates that every citizen has the fundamental duty to uphold and protect the sovereignty, unity and integrity of India. The Constitution reflects respect for diversity of the country, but it tries to ensure that the unity and integrity is maintained.

Statement 2 is not correct: The value of international peace and a just international order, though not included in the Preamble is reflected in other provisions of the Constitution. The Indian Constitution directs the state (a) to promote international peace and security, (b) maintain just and honorable relations between nations, (c) foster respect for international law and treaty obligations, and (d) encourage settlement of international disputes by arbitration. To uphold and observe these values is in the interest of India. Q3. A

Explanation:

Keoladeo National Park, located in Rajasthan, is an important wintering ground of Palaearctic migratory **waterfowl** and is renowned for its large congregation of non-migratory resident breeding birds. The Keoladeo National park, a **World Heritage Site** which was previously the private duck shooting preserve of the Maharaja of Bharatpur, designated as bird sanctuary on 13 March 1956 and a National Park on 10th March 1982 was included in the World Heritage List in 1985. It was also notified as **Ramsar Site in October 1981**. It originated as a royal hunting reserve during the 1850s and was a game reserve for Maharajas and the British. In fact, **Lord Linlithgow, Viceroy of India from 1936 to 1943, shot over thousands of ducks with his hunting party**. The park was the only known wintering site of the central population of the critically endangered **Siberian Crane**, and also serves as a wintering area for other globally threatened species such as the **Greater Spotted Eagle and Imperial Eagle**.

Q4. Answer (b)

Statement 1 is correct: IFCI Ltd (IFCI) was set up as a statutory corporation ("then Industrial Finance Corporation of India") in 1948 for providing medium and long-term finance to industry. In 1993, after repeal of the Industrial Finance Corporation Act, IFCI became a Public Limited Company, registered under the Companies Act, 1956. IFCI is also registered with the Reserve Bank of India (RBI) as a Systemically Important Non-Deposit taking Non-Banking Finance Company (NBFC-ND-SI) and is also a notified Public Financial Institution under Section 2(72) of the Companies Act, 2013. It was established as the first DFI of the country.

Statement 2 is not correct: The Micro Units Development & Refinance Agency Ltd (MUDRA) was set up by the Government of India (GoI). MUDRA has been initially formed as a wholly **owned subsidiary of Small Industries Development bank of India (SIDBI) with 100% capital** being contributed by it. Presently, the authorized capital of MUDRA is ₹5000 crores and paid up capital is ₹1675.92 crore, fully subscribed by SIDBI. More capital is expected to enhance the functioning of MUDRA.

Statement 3 is correct: NABARD is India's apex development bank, established in 1982 under an Act of Parliament to promote sustainable and equitable agriculture and rural development. In its journey of more than four decades, the premier development financial institution has transformed lives in Indian villages through agri-finance, infrastructure development, banking technology, promotion of microfinance and rural entrepreneurship through SHGs & JLGs and more.

This was established under the able Chairmanship of Shri B. Sivaraman, former Member of Planning Commission on 30 March 1979.

Q5. A

- Vaccine-derived polioviruses (VDPVs) are rare strains of poliovirus that have genetically mutated from
 the strain contained in the oral polio vaccine. As per recent stats released by WHO, around 150 VDPD
 cases have been reported in the last 60 years. Hence, statement 1 is correct.
- The oral polio vaccine contains a live, attenuated (weakened) vaccine-virus. When a child is vaccinated, the weakened vaccine-virus replicates in the intestine and enters into the bloodstream, triggering a protective immune response in the child. Like wild poliovirus, the child excretes the vaccine-virus for a period of six to eight weeks. Importantly, as it is excreted, some of the vaccine-virus may no longer be the same as the original vaccine-virus as it has genetically altered during replication. This is called a VDPV.
- Vaccine-derived polioviruses must be managed in the same way as wild poliovirus outbreaks. The
 solution is the same for all polio outbreaks: vaccinate every child several times with oral polio vaccine
 to stop polio transmission, regardless of whether the virus is wild or vaccine-derived. Outbreaks are
 usually rapidly stopped with 2–3 rounds of high quality supplementary immunization activities. Hence,
 statement 3 is not correct.
- There are total of three wild poliovirus strains.
- Type 2 and Type 3 (WPV3) has been eradicated worldwide and Type 1 is yet to be eradicated.
- Once wild poliovirus transmission has been stopped globally, the vaccine-viruses will be the only source of live polioviruses in the community and could potentially lead to the re-emergence of polio.
 Use of the oral polio vaccine in routine immunization programmes will therefore be phased out to eliminate the rare risks posed by vaccine-derived polioviruses. Hence, statement 2 is not correct.

Q6. Answer- (b)

Statement 1 is correct: Salt is a Central subject in the Constitution of India and appears as item No.58 of the Union List of the 7th Schedule. The Union Government alone can make laws relating to the subjects mentioned in the Union List. According to the provision the Central Government is responsible for the manufacture, supply and distribution of Salt by Union Agencies; and regulation and control of manufacture, supply and distribution of salt by other agencies. The Salt Commissioner's Organisation, an attached Office under the Ministry of Commerce & Industry (Department of Industrial Policy & Promotion), is entrusted with the above task.

Statement 2 is correct: State List contains subjects of State and local importance, such as police, trade, commerce, agriculture and irrigation. The State Governments alone can make laws relating to the subjects mentioned in the State List. **Taxes on agricultural income fall under Entry 46 in the State List. Thus, only State Governments can levy tax on agricultural income.**

Statement 3 is not correct: Concurrent List includes subjects of common interest to both the Union Government as well as the State Governments, such as education, forest, trade unions, marriage, adoption and succession. Both the Union as well as the State Governments can make laws on the subjects mentioned in this list. Both the Centre and the States have the power to legislate on item 17 - "Prevention of cruelty to animals." and item 17B: "Protection of wild animals and birds."

Q7. B

- China launched its first Mars mission, the 'Tianwen-1', which is expected to land on the Red Planet's surface in May 2021. The success of the mission will make China the third country to achieve a Mars landing after the USSR and the United States. Hence, Pair 2 is not correctly matched.
- The USSR in 1971 became the first country to carry out a Mars landing—its 'Mars 3' lander being able to transmit data for 20 seconds from the Martian surface before failing. The country made its second and Mars landing two years later in 1973.
- The second country to reach Mars's surface, the US, holds the record for the most number of Mars landings. Since 1976, it has achieved 8 successful Mars landings, the latest being the 'InSight' in 2019 (launched in 2018).
- India and the European Space Agency have been able to place their spacecraft in Mars's orbit. India's Mission is called Mangalyaan, while ESA's Mission is called Mars Express. Mars Express had a lander and rover but both were lost in between the mission.
- Hence pairs 1 and 3 are correctly matched.

Q8. **B**

Explanation:

Short-lived climate pollutants (SLCPs), also referred to as "short-lived climate forcers" by the Intergovernmental Panel on Climate Change, are greenhouse gasses and other climate pollutants that have relatively short atmospheric lifetimes compared to carbon dioxide.

Statement 1 is correct: Methane is a powerful greenhouse gas and short-lived climate pollutant (SLCP) primarily emitted by human activities. It has an atmospheric **lifetime of around 12 years.**

Statement 2 is correct: Global Methane Initiative (GMI) is a **voluntary** government and an informal international partnership having members from 45 countries including the United States and Canada. The forum has been created to achieve global reduction in anthropogenic methane emission through partnership among developed and developing countries having economies in transition.

Statement 3 is not correct: The forum was created in 2004 and **India has been one of the members since its inception.**

Q9. Answer-(b)

Statement 1 is not correct: The 1961 Vienna Convention on Diplomatic Relations only deals with treaties among States. It does not address the diplomatic relations of States with international organizations like the United Nation or the European Union. There are separate treaties that govern the diplomatic relations of States with international organizations, such as the 1946 Convention on the Privileges and Immunities of the UN and the 1947 Convention on the Privileges and Immunities of the Specialized Agencies.

Statement 2 is correct: The Vienna Convention on Diplomatic Relations, 1961 says that one of the rules of international law in the UN Charter is that countries should not meddle in each other's internal affairs. Article 41 of the Convention says that people who have special rights and protections because of their diplomatic status must follow the laws and rules of the country they are in, and must not get involved in its domestic issues.

Q10. Answer (d)

Statement 1 is not correct: The WholeSale Price Index is released by the Office of the Economic Adviser (OEA), Which is an attached office of the **Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.** Base year is 2011-12 for this index. It is provided for the Eight Core Industries.

Statement 2 is not correct: Consumer Price Index is released by the Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation. Consumer Price Indices (CPI) measure changes over time in the general level of prices of goods and services that households acquire for the purpose of consumption. CPI is widely used as a macroeconomic indicator of inflation, as a tool by governments and central banks for inflation targeting and for monitoring price stability, and as deflators in the national accounts. CPI is also used for indexing dearness allowance to employees for increase in prices.

Q11. Answer: b

Statement 1 is not correct: Prokaryotic cells are found in single-celled microorganisms known as prokaryotes, which lack a true nucleus and membrane-bound organelles. On the other hand, Eukaryotic cells are found in both unicellular and multicellular organisms, and they possess a true nucleus along with membrane-bound organelles. **Eukaryotic cells are generally larger and more complex than prokaryotic cells, and as a result, tend to multiply slower.**

Statement 2 is correct: Prokaryotes, with the exception of mycoplasma, typically possess a cell wall that surrounds the cell membrane. The cytoplasm, a fluid matrix, fills the cell. **Prokaryotic cells lack a nuclear membrane, leaving their genetic material unprotected, unlike eukaryotic cells where it is enclosed within a well-defined nucleus.** Eukaryotic cells possess an organized nucleus with a nuclear envelope. Their genetic material is organized into chromosomes.

Statement 3 is correct: Ribosomes are non-membrane bound organelles found in both eukaryotic as well as prokaryotic cells. Within the cell, ribosomes are found not only in the cytoplasm but also within the two organelles namely chloroplasts (in plants) and mitochondria and on rough endoplasmic reticulum (ER).

Q12. Answer -(d)

Statement 1 is not correct: When a government spends more than it collects by way of revenue, it incurs a budget deficit.

More formally, it refers to the excess of total expenditure (both revenue and capital) over total receipts (both revenue and capital).

Statement 2 is not correct: : **Fiscal deficit** is the difference between the government's total expenditure and its total receipts **excluding borrowing** .

Gross fiscal deficit = Total expenditure – (Revenue receipts + Non-debt creating capital receipts). Q13. **Answer-(a)**

Statement 1 is correct: The mangrove tidal forests are found in the areas of coasts influenced by tides. They are a group of trees and shrubs that live in the coastal intertidal zone. Mud and silt get accumulated on such coasts.

mangroves are the common varieties with roots of the plants submerged under water. The deltas of the Ganga, the Mahanadi, the Krishna, the Godavari and the Kaveri are covered by such vegetation. In the Ganga-Brahmaputra delta, sundari trees are found, which provide durable hard timber. Palm, coconut, keora, agar, etc.



Figure 5.6: Mangrove Forests

Statement 2 is not correct: Salt marshes are coastal wetlands that are flooded and drained by salt water brought in by the tides (not Kelp Forests). They are marshy because the soil may be composed of deep mud and peat. Peat is made of decomposing plant matter that is often several feet thick. Peat is waterlogged, root-filled, and very spongy. Because salt marshes are frequently submerged by the tides and contain a lot of decomposing plant material, oxygen levels in the peat can be extremely low—a condition called hypoxia. Hypoxia is caused by the growth of bacteria which produce the sulphurous rotten-egg smell that is often associated with marshes and mudflats.



Salt marsh within Narragansett Bay National Estuarine Research Reserve. Salt marshes are coastal wetlands which are flooded and drained by tides.

Statement 3 is not correct: Kelp forests can be seen along much of the west coast of North America.

Kelp are large brown algae that live in cool, relatively shallow waters close to the shore (not Salt Marshes). They grow in dense groupings much like a forest on land. These underwater towers of kelp provide food and shelter for thousands of fish, invertebrates, and marine mammal species.

Kelp forests barbar a greater veriety and higher diversity of plants and animals then almost any other accounts.

Kelp forests harbor a greater variety and higher diversity of plants and animals than almost any other ocean community. Many organisms use the thick blades as a safe shelter for their young from predators or even rough storms.

Kelp forests provide food and shelter for thousands of species



In ideal conditions, kelp can grow up to 18 inches per day, and in stark contrast to the colorful and slow-growing corals,

Q14. Answer- (b)

Pair 1 is not matched correctly: Jatiya Sangsad is a 350-member unicameral Parliament of Bangladesh. Members are elected in accordance with law on the basis of procedure of proportional representation in the Parliament through Single Transferable Vote.

Pair 2 is not matched correctly: The Knesset is Israel's house of representatives (the Parliament). The Knesset has the sole authority to pass laws - to supervise government work, to choose the President of Israel and the state comptroller, and to deliberate over state issues through the Knesset committees and the work of the Assembly.

Pair 3 is matched correctly: Duma and Federal Council is the Parliament of Russia. The State Duma and the Federation Council sit separately but can meet together to listen to the messages of the President and the Constitutional Court, speeches of the heads of foreign states.

Pair 4 is matched correctly: Diet is the national legislature of Japan which replaced the Imperial Diet in 1947. The Imperial Diet had been created in 1890 under the Meiji Constitution and served for over 56 years. O15. **Answer-C**

Context: Vaishali and Praggnanandhaa, recently became the first brother-sister duo to become Grandmasters. Grandmaster is the highest title or ranking that a chess player can achieve.

Statement 1 is correct: The International Chess Federation (FIDE) is the governing body of the sport of chess, and it regulates all international chess competitions. Constituted as a non-governmental institution, it was recognized by the International Olympic Committee as a Global Sporting Organization in 1999.

Statement 2 is correct: FIDE currently has its headquarters in Lausanne, Switzerland but it was initially founded in 1924 in Paris.

Statement 3 is correct: It was founded under the motto "Gens una Sumus" (Latin for "We are one Family"). It was one of the very first International Sports Federations, alongside the governing bodies of the sports of Football, Cricket, Swimming, and Auto Racing. It is now one of the largest, encompassing 201 countries as affiliate members, in the form of National Chess Federations.

Q16. Answer: B

Statement 1 is not correct: Consent Act of 1891, which raised the legal age for marriage for the women in India from 10 years to 12 was passed under Viceroy Lord Lansdowne (1888 to 1894).

Statement 2 is correct: In 1901 Lord Curzon summoned the first All India Conference of Directors of Public Instruction and representatives of universities at Simla. The deliberations of the Conference were a great help to him in planning his educational reforms. Then he appointed a Commission on Education known as the Indian Universities Commission with Sir Thomas Raleigh as its President on 27 January 1902 'to enquire into the condition and prospects of universities in India and to recommend proposals for improving their constitution and working. The recommendations of the Indian Universities Commission were incorporated in the Government of India Resolution 1904. The publication of the Government of India Resolution was followed by the passing of the Indian Universities Act, 1904.

Statement 3 is correct: The second Indian Factories Act was passed in 1891 under Lord Lansdowne (1888 to 1894). It provided for a weekly holiday for all workers. Working hours for women were fixed at 11 per day while daily hours of work for children were reduced to 7. Hours of work for men were still left unregulated.

Q17.CAnswer-(c)

Black Sea is a large inland sea bordered by **Russia** to the northeast, **Turkey** to the south, and **Bulgaria**, Georgia to the east, **Ukraine** to the north and Romania to the west.



Q18. Ans: (a)

Yajna Sri Satakarni (AD 165–94) was the last great king of the Satavahana dynasty, and recovered north Konkan and Malwa from the Saka rulers. He was a patron of trade and navigation, and his coins appear not only in Andhra but also in Maharashtra, MP, and Gujarat. His **enthusiasm for navigation and overseas trade is demonstrated by the representation of a ship on his coins.**

Q19. **Answer-(b)**

Pair 1 is correctly matched: Near Vidisha, Madhya Pradesh, there are 20 caves carved into the rocks, called the Udaygiri Caves. They were built between the 3rd and 5th century CE and are some of the earliest Hindu temples and images in India. They have statues of Vishnu, Shiva, and Jain Tirthankaras. The Hathi Gumpha is the most well-known cave, with a big writing of King Kharavela on it.

Pair 2 is not correctly matched: The Badami Caves are a group of four ancient caves, each with a different religious theme. The first cave has statues of Shiva in various forms, such as the cosmic dancer and the half-female. The second cave is a Jain sanctuary, with sculptures of the enlightened ones. The third and fourth caves are smaller, but have beautiful temples of both Jain and Hindu faiths. These caves were built in the 6th century.

Pair 3 is correctly matched: The invaluable ensemble of 34 caves at Ellora in the Charanandri hills of western India's Maharashtra State showcases a spirit of co-existence and religious tolerance through the outstanding architectural activities carried out by the followers of three prominent religions: Buddhism, Brahmanism, and Jainism. The last phase, between the 9th and 12th centuries, saw the excavation of a group of caves (caves 30–34) reflecting Jaina philosophy.

Q20. **A**

A remarkable chapter in the history of **Chandannagar** unfolded when **Aurobindo spent around forty days** within the city's embrace. Aurobindo Ghosh was a clandestine presence – a time when he bore the ominous title of "**the most dangerous man**" in the eyes of the British Government, being a key figure in the **armed revolution**. This narrative began on **21 February 1910**, when Aurobindo entered the revolutionary haven of Chandannagar. **His departure transpired on 31 March 1910**. During this phase of secrecy, his journey was guided by an inner compass. He mentions in his work, "**NIJER KATHA**," that he arrived in Chandannagar following the guidance of his mentor, 'Parameswara'.

Q21. A

Explanation:

Pair is 1 correctly matched: Silicosis is a long-term lung disease caused by inhaling large amounts of crystalline silica dust, usually over many years. Silica is a substance naturally found in certain types of stone, rock, sand and clay. Working with these materials can create a very fine dust that can be easily inhaled.

Pair 2 is correctly matched: Asbestosis is a chronic lung condition that is caused by prolonged exposure to high concentrations of asbestos fibers in the air. It is believed to be mostly an occupational disease but there are reports of secondhand exposure to asbestos containing dust.

Pair 3 is not correctly matched: Byssinosis is a disease of the lungs. It is caused by breathing in (inhaling) cotton dust or dust from other vegetable **fibers such as flax, hemp, or sisal while at work**.

Pair 4 is not correctly matched: The **pneumoconiosis** are a group of lung diseases caused by the lung's reaction inhaling certain dusts. The main cause of the pneumoconiosis is work-place exposure. It's caused by breathing in **coal dust.**

Q22. Answer-(b)

Context: Recently, The Ministry of Environment, Forest and Climate Change organized a **Country-Led Initiative (CLI) event as part of the United Nations Forum on Forests (UNFF)** from 26-28 October, 2023 at the Forest Research Institute (FRI), Dehradun, Uttarakhand.

Statement 1 is not correct: The United Nations Forum on Forests (UNFF) promotes the management, conservation, and sustainable development of all types of forests. UNFF was established in 2000 following a five-year period of forest policy dialogue within the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF). In October 2000, the UN Economic and Social Council (ECOSOC), in resolution 2000/35, established the International Arrangement on Forests (IAF), including the UNFF as a subsidiary body of ECOSOC. UNFF also established the Collaborative Partnership on Forests (CPF), a partnership of 14 major forest-related international organizations, institutions, and convention secretariats.

Statement 2 is correct: India holds the distinction of being a founding member of UNFF. The UN General Assembly adopted the first-ever UN Strategic Plan for Forests for the period of 2017-2030. This Strategic Plan serves as a global framework for actions at all levels to achieve the sustainable management of all types of forests, including trees outside forests, and to combat deforestation and forest degradation. Q23. Answer: (a)

Statement 1 is correct: The Infrastructure Finance Secretariat (IFS) in its endeavour to usher in private investment in infrastructure is constantly introducing interventions to set up an enabling ecosystem for infrastructure development and delivery. It is a scheme for financial support for **project development expenses of PPP Projects**.

Statement 2 is not correct: The Department of Economic Affairs (DEA), Ministry of Finance, Government of India, notifies Scheme for Financial Support for Project Development Expenses of PPP Projects.

Statement 3 is not correct: As a Central Sector Scheme not centrally sponsored scheme.

Under Central sector schemes, it is 100% funded by the Union government and implemented by the Central Government machinery. Central sector schemes are mainly formulated on subjects from the Union List.In addition, the Central Ministries also implement some schemes directly in States/UTs which are called Central Sector Schemes but resources under these Schemes are not generally transferred to States.

Under the Centrally Sponsored Scheme (CSS) a certain percentage of the funding is borne by the States in the ratio of 50:50, 70:30, 75:25 or 90:10 and the implementation is by the State Governments.

Centrally Sponsored Schemes are formulated in subjects from the State List to encourage States to prioritise in areas that require more attention. Funds are routed either through consolidated funds of States and or are transferred directly to State/ District Level Autonomous Bodies/Implementing Agencies.

Q24. Answer-(a)

Context: The Rubber Board has called a conference of exporters for March 15, 2024 to discuss export options, as the price of natural rubber has risen sharply in less than a week, widening the price difference between the domestic and international markets.

Statement 1 is correct: The Rubber Board is a statutory body constituted by the Government of India, under the Rubber Act 1947, for the overall development of the rubber industry in the country. It comes under the purview of the Ministry of Commerce and Industry.

Statement 2 is not correct: The Board shall consist of - (a) a **Chairman to be appointed by the Central Government**; (b) two members to represent the State of Tamil Nadu, one of whom shall be a person representing rubber-producing interests; (c) eight members to represent the State of Kerala, six of whom shall be persons representing the rubber-producing interests, three of such six being persons representing the small growers; (d) ten members to be nominated by the Central Government, of whom two shall represent the manufacturers and four labour; (da) three members to be nominated by the Central Government of whom two shall be from the Department of Commerce and one from the Department of Agriculture and Co-operation; (e) three members of Parliament of whom two shall be elected by the House of People and one by the Council of States; (ee) The Executive Director, ex-officio; and (f) The Rubber Production Commissioner, ex-officio.

NOTE: Functions of the Board- (1) It shall be the duty of the Board to promote by such measures as it thinks fit the development of the rubber industry. (2) Without prejudice to the generality of the foregoing provision, the measures referred to therein may provide for - (a) undertaking, assisting or encouraging scientific, technological and economic research; (b) training students in improved methods of planting, cultivation, manuring and spraying; (c) the supply of technical advice to rubber growers; (d) improving the marketing of rubber; (e) improving the quality of rubber and implementing the standards for quality, marking, labelling and packing for the rubber produced or processed in, imported into or exported from India; (f) the collection of statistics from owners of estates, dealers, manufacturers and processors; (g) securing better working conditions and the provisions and improvement of amenities and incentives for workers.

(3) Carrying out any other duties which may be vested in the Board under the rules made under this Act. Q25. Answer- (c)

Context: The RBI has directed Paytm Payments Bank to stop accepting deposits or top-ups in client accounts, wallets, FASTags, and other instruments beginning March 15.

Statement 1 is correct: The primary goal of payments banks is to expand the availability of payment and financial services to small businesses, low-income households, and the migratory labour workforce in a safe technology-driven environment.

Statement 2 is correct: A payments bank is similar to any other bank, but it operates on a smaller scale and does not carry any credit risk. In other words, it can **perform most banking transactions but cannot make loans or issue credit cards.**

Statement 3 is correct: It accepts demand deposits of up to Rs 1 lakh, **provides remittance services**, mobile payments/transfers/purchases, and other **banking services such as ATM/debit cards**, net banking, and third-party cash transfers.

The RBI aims to boost financial service penetration in the country's remote locations through payments banks.

Q26. Answer-(c)

Context: Recently, Significant decisions have been made by the International Tropical Timber Council, including its extension.

Statement 1 is correct: The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the sustainable management and conservation of tropical forests and the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests.

The International Tropical Timber Agreement 1983 (ITTA 1983), which was negotiated under the United Nations Conference on Trade and Development's auspices, formed ITTO.

Statement 2 is correct: It develops internationally agreed policy guidelines and norms to encourage sustainable forest management (SFM) and sustainable tropical timber industries and trade.

- Assists tropical member countries to adapt such guidelines and norms to local circumstances and to implement them in the field through projects and other activities.
- Collects, analyzes and disseminates data on the production and trade of tropical timber.
- Promotes sustainable tropical timber supply chains.
- Helps develop capacity in tropical forestry.

Statement 3 is correct: There are 75 members of The International Tropical Timber Organization (ITTO), in which India is included.

Ninety percent of the worldwide tropical timber trade is handled by its members, who also oversee about 80% of the world's tropical forests.

Q27. **Answer: (b)**

Statement 1 is correct: The human Nervous System is divided into two parts namely the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). The **Central Nervous System includes the brain as well as the spinal cord and is the site of information processing and control.** The Peripheral Nervous System comprises all the nerves of the body associated with the Central Nervous System (brain and spinal cord).

Statement 2 is not correct: The communication between the Central Nervous System and the other parts of the body is facilitated by the Peripheral Nervous System consisting of **Cranial Nerves arising from the brain and Spinal Nerves arising from the spinal cord.**

Statement 3 is correct: Visceral Nervous System is the part of the Peripheral Nervous System that comprises the whole complex of nerves, fibres, ganglia, and plexuses by which impulses travel from the Central Nervous System to the viscera and from the viscera to the Central Nervous System.

Q28. Answer: (a)

Option 1 is correct: The "Vienna Classification" (International Classification of the Figurative Elements of Marks) is an international classification system used to classify the figurative elements of marks. Vienna Classification is established under the 'Vienna Agreement,' a World Intellectual Property Organization (WIPO)-administered multilateral treaty signed on June 12, 1973.

The purpose of the Classification is essentially to facilitate 'Trademark' anticipation searches and obviate substantial reclassification work when documents are exchanged at the international level. Under

this classification, the countries party to the Vienna Agreement no longer need to draw up their own national classification or keep an existing one up to date.

India signed the Vienna Agreement on June 7, 2019.

Options 2, 3 and 4 are not correct: The Vienna Classification is not directly related to Trade Secrets, Copyright, or Geographical Indications. It is a system used to classify figurative elements of **trademarks**, particularly logos and graphical representations, into categories **for registration purposes.**

Q29. B

- Recently, presence of singly ionised fluorine was detected in the atmospheres of EHe (Extreme Helium Star) that makes a strong case that the main formation of EHe involves a merger of a carbon-oxygen and a Helium (He) white dwarf.
- EHe is **low-mass supergiant star** that is almost devoid of hydrogen, and has abundance of surface helium. **Hence, statement 1 is correct.**
- This is in contrast to majority of Stars (including Sun) which contain some 70% hydrogen (by mass) throughout their lives.
- EHe stars are much larger and hotter than Sun despite being less massive. Hence, statement 2 is not correct.

Q30.

Answer: (d)

Context: More than Rs. 40,700 crore was sanctioned to over 1,80,630 accounts under Stand-Up India Scheme in the last 7 years.

Statement 1 is not correct: The Stand up India Scheme does not include beneficiaries from the OBC community.

Statement 2 is not correct: The scheme aims to provide loans for **greenfield enterprises (not brownfield)** in manufacturing, services or the trading sector and activities allied to agriculture.

Statement 3 is not correct: The scheme aims to facilitate bank loans between **Rs.10 lakh and Rs.100 lakh** to at least one Scheduled Caste/ Scheduled Tribe borrower and at least one woman borrower per bank branch of Scheduled Commercial Banks.

Note: Stand up India Scheme was launched on **5th April 2016** to promote entrepreneurship at grassroot level focusing on economic empowerment and job creation. This scheme has been extended up to the **year 2025.** Stand-Up India was launched to promote entrepreneurship amongst women, Scheduled Castes (SC) & Scheduled Tribes (ST) categories, to help them in starting a greenfield enterprise in manufacturing, services or the trading sector and activities allied to agriculture.

Q31. Answer-(a)

Context: Prime Minister official visit to the United Arab Emirates (UAE) from February 13-14, 2024.

The UAE is India's trusted partner in energy security, being the only nation from the region which has strategic oil reserves stored in India.

The Indian Strategic Petroleum Reserves Ltd (ISPRL) signed an agreement with the Abu Dhabi National Oil Company (ADNOC) to invest in the strategic crude oil storage facility in Mangalore. ADNOC has been utilizing one of the caverns in Mangalore since 2018 and also has an agreement for the Padur facility. This collaboration is part of India's efforts to enhance its energy security.

Q32. **Answer-(d)**

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Trade and Development Report: It is released by UNCTAD. UNCTAD's Trade and Development Report 2023 warns that the global economy is stalling, with growth slowing in most regions compared with last year and only a few countries bucking the trend.

World Investment Report: It is released by UNCTAD. UNCTAD's World Investment Report 2023 reveals a widening annual investment deficit that developing countries face as they work to achieve the Sustainable Development Goals (SDGs) by 2030.

Technology and Innovation Report: It is released by UNCTAD. The Technology and Innovation Report 2023 highlights the opportunities that green innovation – goods and services with smaller carbon footprints – offer developing countries to spur economic growth and enhance technological capacities.

Digital Economy Report: It is released by UNCTAD. The Digital Economy report 2021 provides a review of studies dealing with cross-border data flows and analyzes the inequalities in the data-driven digital economy.

Q33. Answer-(a)

Pair 1 is not correctly matched: Bhand Pather, the traditional theatre form of Kashmir, is a unique combination of dance, music and acting. Satire, wit and parody are preferred for inducing laughter. In this theatre form, music is provided with surnai, nagaara and dhol. Since the actors of Bhand Pather are mainly from the farming community, the impact of their way of living, ideals and sensitivity is discernible emotions, accomplishment of rasa alongwith the development of character can be seen in this theatre form. The two important styles of Swang are from Rohtak and Haathras. In the style belonging to Rohtak, the language used is Haryanvi (Bangru) and in Haathras, it is Brajbhasha.

Pair 2 is correctly matched: Maach is the traditional theatre form of Madhya Pradesh. The term Maach is used for the stage itself as also for the play. In this theatre form songs are given prominence in between the dialogues. The term for dialogue in this form is bol and rhyme in narration is termed vanag. The tunes of this theatre form are known as rangat.

Pair 3 is not correctly matched: Bhaona is a presentation of the Ankia Naat of Assam. In Bhaona cultural glimpses of Assam, Bengal Orissa, Mathura and Brindavan can be seen. The Sutradhaar, or narrator begins the story, first in Sanskrit and then in either Brajboli or Assamese.

Q34. Answer: c

The inscriptions of the Cholas who ruled in Tamil Nadu refer to more than 400 terms for different kinds of taxes. The most frequently mentioned tax is *vetti*, taken not in cash but in the form of forced labour, and *kadamai*, or land revenue. There were also taxes on thatching the house, the use of ladders to climb palm trees, a cess on succession to family property, etc.

Q35. **Answer - (c)**

Statement 1 is correct: The GDP Deflator is the study of an economy by analysing its gross domestic product between the base year (from where it is considered as a reference) to the year where it is calculated to understand the changes in price levels of goods and services produced within an economy.

Statement 2 is correct: The GDP Deflator also helps in providing insights related to two different economies at the same point in time to determine the inflation level over the same goods and services at any point in time. **Statement 3 is correct:** The GDP Deflator is calculated as the ratio of the nominal GDP (which is the sum of the inflation and real GDP) to that of the real GDP of that country, thus, providing information, related to changes in price levels occurred in any economy over a period of time, generally from that of the base year (the year whose prices are being used to calculate the real GDP).

Statement 4 is not correct: In the calculation of real and nominal GDP of the current year, the volume of production is fixed. Therefore, if these measures differ it is only due to a change in the price level between the base year and the current year.

Q36. **Answer: (c)**

The Amrit Bharat Station Scheme has recently been launched for development of Railway stations on Indian Railways. Presently, the scheme envisages to take-up 1275 stations for upgradation/modernisation over Indian Railway.

The Amrit Bharat Station scheme envisages development of stations on a continuous basis with a long-term approach. It involves preparation of Master Plans and their implementation in phases to improve the amenities at the stations like improvement of station access, circulating areas, waiting halls, toilets, lift/escalators as necessary, cleanliness, free Wi-Fi, kiosks for local products through schemes like 'One Station One Product', better passenger information systems, Executive Lounges, nominated spaces for business meetings, landscaping etc. keeping in view the necessity at each station.

These stations will be redeveloped under what is being internally called the "Khurda model of redevelopment". Khurda station in Odisha was modernized for Rs 4 crore with all contemporary amenities for passengers. The main structure was renovated, the facade was redone and the number of railway tracks was also increased.

Q37. C

- The draft report on **Non-Personal Data (NPD) Governance Framework** was released recently for inviting feedbacks by the committee **headed by Kris Gopalakrishnan.**
- Data is considered a national resource that should be utilized for the welfare of the society.
- With **exponential spurt in awareness** regarding the sanctity of personal data and the need to safeguard its privacy, there has also been the **parallel development to regulate non-personal data** (NPD) in line to the proposed Personal Data Protection Bill, 2019.
- Thus, **Ministry of Electronics and Information Technology** constituted a committee of experts which released its report for public consultation, seeking feedback from the public on a proposed NPD Law.
- The draft report defines non-personal data as any set of data which does not contain personally
 identifiable information, in essence means that no individual or living person can be identified by
 looking at such data. It includes data sets aggregated and collected by various mobile apps, websites
 and devices.
- Unlike personal data, which contains explicit information about a person's name, age, gender, sexual
 orientation, biometrics and other genetic details, non-personal data is more likely to be in an
 anonymised form.
- Anonymous data is a data that is initially personal data but is later made anonymous using certain data transformation techniques, to the extent that individual specific events are no longer identifiable. Hence, statement 1 is correct.
- Public non-personal data: All the data collected by government and its agencies such as census, data collected on the total tax receipts or any information collected during execution of all publicly funded works has been kept under the umbrella of public non-personal data. Hence, statement 2 is correct.
- While Non-Personal Data collected or generated by the Government where such data is explicitly afforded confidential treatment under a law, like data of land records, public health information, vehicle registration data shall not constitute Public Non-Personal Data.

- Community non-personal data: Any data identifiers about a set of people who have either
 the same geographic location, religion, job, or other common social interests will form the
 community non-personal data.
- Private non-personal data: It can be defined as those which are produced by individuals which
 can be derived from application of proprietary software or knowledge. Private non-personal
 data is further sub-classified into 'sensitive non-personal data' & 'critical non-personal data'.

Other recommendations of the report:

- Stakeholders and their roles: It recognizes natural persons, entities and communities to whom non-personal data (prior to anonymization or aggregation) relates as 'data principals' and entities which undertake collection, storage and processing of non-personal data as 'data custodians'.
 - It also enables communities or groups of data principals to exercise their rights through 'data trustees'.
 - It recognizes 'data businesses' as a horizontal category of businesses involved in data collection and processing. Based on specific threshold requirements, it proposes a compliance regime to govern such data businesses.
- **Requirement of consent**: It classifies individuals to whom the data relates (prior to anonymization), as the 'owners' of private non-personal data and it recommends obtaining consent of the data principal (at the time of collection) for anonymization and use thereafter.
- Localisation of data: It recommends localization of sensitive non-personal data and critical non-personal data, in line with the requirements applicable to localization of sensitive personal data and critical personal data under the Personal Data Protection Bill, 2019 (PDP Bill).
- Purpose of data sharing: The Report contemplates three broad purposes for data sharing:
 - For sovereign purposes may be used by the Government, regulators and law enforcement authorities, inter alia, for cyber security, crime and investigation, public health and in sectoral developments.
 - **For core public interest purposes** may be used for general and community use, research and innovation, delivery of public services, policy development etc.
 - For economic purposes may be used by business entities for research, innovation and doing business. It may also be leveraged as training data for AI/ML systems.

Q38. Answer: (c)

Human body has the presence of two kinds of circulating fluids namely **Blood** and **Lymph**. Lymph is the clear, colorless fluid that collects in a blister to provide protection to the underlying tissue.

Statement 2 is not correct: The Lymphatic System consists of a large number of lymph ducts, lymph nodes and lymph vessels. **It lacks a pumping mechanism. Fluid is pushed by muscle movement.** The lymph nodes are scattered throughout the body. They are more concentrated in the neck, armpits and groins.

Statement 1 is correct: Functions of lymph are as follows:

- In the Lymphatic System, lymph facilitates the transportation of oxygen and nutrients to areas of the body that are not easily reached by the bloodstream.
- It drains away excess tissue fluid from extra-cellular spaces and pours back into the blood.
- > It absorbs and transports fats absorbed from the small intestine (lacteals).
- It collects nitrogenous waste.
- > Lymphocytes and antibodies present in lymph help in removing bacteria.

Statement 3 is correct: Spleen is the largest lymphoid organ with following functions:

➤ It facilitates Haemopoiesis – Formation of Blood cells in the foetus.

- > It destroys the old and worn out blood cells and hence termed as 'graveyard' of RBC.
- It acts as a Blood reservoir.
- > It performs defensive action by engulfing bacteria.

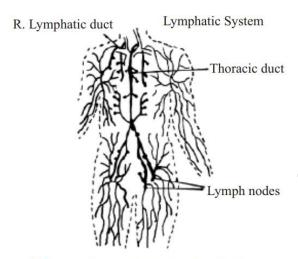


Fig. Lymph vessels and lymph glands

Statement 4 is correct: Unlike blood, which contains red blood cells (RBCs), white blood cells (WBCs), platelets, and plasma, Lymph contains primarily plasma and white blood cells (WBCs). The difference between the lymph and blood given in the table below.

Blood	Lymph
Red in colour due to presence of haemoglobin	1. Colourless fluid
2. Flows rapidly	2. Flow is very slow
3. Contains RBC, WBC, Platelets and Plasma	3. Contains plasma and WBC
4. Route of blood flow	4. Route of lymph flow
Heart ↓	Tissue Spaces
Arteries	Lymph Capillaries
\downarrow	\
Capillaries	Lymph Vessels
\downarrow	\
Veins	Subclavian Vein
\downarrow	\
Heart	Heart

Table: Differences between Blood and Lymph

Q39. Answer-(b)

Pair 1 is not correctly matched: Operation Ajay is not associated with Ukraine; it was an operation to evacuate Indian citizens from Israel during the 2023 Israel–Hamas war.

Pair 2 is correctly matched: Operation Kaveri was indeed related to Sudan; it was an evacuation effort to bring back Indian citizens stranded in Sudan amid intense fighting.

Pair 3 is correctly matched: Operation Dost was associated with Syria; it was a search and rescue operation initiated by the Government of India to aid Syria and Turkey after the 2023 Turkey–Syria earthquake.

Q40. Answer-b

Context: The Reserve Bank of India updated the requirements for the Regulatory Sandbox (RS) project, mandating that participating firms adhere to digital personal data protection standards. The **Regulatory Sandbox allows for live testing of novel products or services in a controlled regulatory environment. Regulators may provide particular relaxations for testing purposes, subject to specified criteria.**

Statement 1 is correct: RS usually refers to live testing of new products or services in a controlled/test regulatory environment for which regulators may (or may not) permit certain regulatory relaxations for the limited purpose of the testing. The RS allows the regulator, the innovators, the financial service providers (as potential deployers of the technology) and the customers (as final users) to conduct field tests to collect evidence on the benefits and risks of new financial innovations, while carefully monitoring and containing their risks.

Statement 2 is correct: The RBI may consider relaxing, if warranted, some of the regulatory requirements for applicants for the duration of the RS on a case-to-case basis. A few of the examples of regulatory relaxation which may be granted are given below:

- Liquidity requirements
- Board composition
- Management experience
- Financial soundness
- Track record
- Statutory restrictions

Statement 3 is not correct: Risks and Limitations associated with Regulatory Sandbox:

- Innovators may lose some flexibility and time in going through the sandbox process. However, running the RS in a time-bound manner at each stage can mitigate this risk.
- Case-by-case bespoke authorizations and regulatory relaxations can involve time and discretional
 judgements. This risk may be addressed by handling applications in a transparent manner and
 following well-defined principles in decision-making.
- The RBI or its RS cannot provide any legal waivers.
- Post-sandbox testing, a successful experimenter may still require regulatory approvals before the product/services/technology can be permitted for wider application.

Q41. **Answer-(c)**

Statement 1 is correct: The Amaravati school of art flourished in the region of Andhra Pradesh between the lower valleys of rivers Krishna and Godavari. **The main patrons of this art form were the Satavahans but it carried on even later, patronized by their successor Ikshavaku rulers.**

Statement 2 is correct: An important characteristic of the Amaravati school is the 'narrative art'. The medallions were carved in such a manner that they depict an incident in a natural way. For example one medallion depicts a whole story of 'taming of an elephant by the Buddha'. **Another important feature of Amravati art is the use of white marble like stone to carve out the figures.** There is prominence of human figures rather than of nature.

Statement 3 is correct: The Amaravati school of art is said to have flourished between 150 BC and 350 AD. Sculptures of this school are mainly found on the railings, plinths and other parts of stupas. **The thematic representations include the stories from the life of the Buddha.**

Q42. A

- Recently, Reserve Bank of India (RBI) released the National Strategy for Financial Education (NSFE): 2020-2025.
- NSFE intends to empower various sections of the population to develop knowledge, skills, attitude
 and behaviour which are needed to manage their money better and to plan for their future. Hence,
 statement 2 is correct.
- NSFE recommends multi-stakeholder-led approach for creating a financially aware and empowered India
- NSFE has been prepared by the National Centre for Financial Education (NCFE) in consultation
 with all the Financial Sector Regulators (RBI, SEBI, IRDAI and PFRDA), DFS and other Ministries and
 other stakeholders (DFIs, SROs, IBA, NPCI). Hence, statement 1 is not correct.
- Technical Group on Financial Inclusion and Financial Literacy would be responsible for periodic monitoring and implementation of NSFE. Hence, statement 3 is not correct
- Vision provided by NSFE 2020-2025
- Inculcation of financial literacy concepts among the various sections of the population through financial education to make it an important life skill. Financial education should start at school, for people to be educated as early as possible.
- o Improve usage of digital financial services in a safe and secure manner.
- Manage risk at various life stages through relevant and suitable insurance cover. For example, planning for old age and retirement through coverage of suitable pension products.
- Document also recommends adoption of a '5 C' approach for dissemination of financial education:
- o Content: Creating financial literacy content for all.
- Capacity: Develop the capacity of various intermediaries who can be involved in providing financial literacy and develop a 'Code of Conduct' for financial education providers.
- Community: Evolve community led approaches for disseminating financial literacy in a sustainable manner.
- Communication: Use technology, mass media channels and innovative ways of communication for dissemination of financial education messages.
- o **Collaboration:** Integrate financial education content in school curriculum, various Professional and Vocational courses.

Q43. A

Amongst the **early Chola kings**, who helped to establish the kingdom was **Vijayalaya** (846-871), who conquered **Tanjore**. Even more important was **Parantaka I** (907-955). He **conquered the land of the Pandyas** and took the title of **Maduraikonda**, "the conqueror of Madurai". But Parantaka was **also defeated by** one of the Rashtrakuta kings, **Krishna II**. **Parantaka** realised the conditions where the **consolidation of kingdom is possible through food sufficiency**, and indicators of **life necessities**, along with the **governance**. So, he encouraged agriculture in the Chola kingdom.

Q44. A

The expenditure on secret services is to be monitored by the respective Head of the Office through reports submitted by the officer designated for incurring expenditure on secret services.

Under Section 619 of the Companies Act, 1956, the auditor (statutory auditor) of a government company, including a deemed government company, appointed by the CAG conducts the audit of accounts of the companies. On the basis of supplementary audit conducted thereafter, the CAG issues comments upon or supplements the Audit Report of the statutory auditor. **The accounts of secret expenditure will not be subject to scrutiny by the Accountant General**.

The role of CAG in the auditing of public corporations is also limited. It is limited to the role of private auditors in the auditing of some of the public corporations, where CAG Either conducts only a supplementary audit or does not come into the picture at all.

The Committee on Public Accounts is constituted by Parliament each year for examination of accounts showing the appropriation of sums granted by Parliament for expenditure of Government of India. Public Accounts Committee for which CAG functions as a friend, philosopher and guide. **PAC examines the annual audit report of the CAG, which was presented to the parliament by the President. It does not limit the role of CAG**.

Q45. Answer-(d)

Directive Principles are certain ideals, particularly aiming at socio-economic justice, which according to the framers of the Constitution, Indian State should strive for.

Under Article 39 the State shall direct its policies towards securing:

- (a) right to an adequate means of livelihood to all the citizens;
- (b) the ownership and control of material resources shall be organized in a manner to serve the common good;
- (c) the operation of the economic system does not result in the concentration of wealth to the common detriment.
- (d) equal pay for equal work for both men and women;
- (e) the protection of the strength and health of the workers; and
- (f) that childhood and youth are not exploited.

According to Article 43A, the State shall take steps to secure the participation of workers in the management of industries.

Under Article 40, the State shall take steps to **organize village panchayats as units of Self Government** in India.

According to Article 48 the State shall take steps to **prohibit slaughter of cows, calves** and other milch and draught cattle.

Article 51 of the Constitution, declares that to establish international peace and security the State shall endeavour to— (i) promote international peace and security; (ii) maintain just and honorable relations with the nations; (iii) foster respect for international law and treaty obligations; and **(iv) encourage settlement of international disputes by arbitration.**

Q46. D

Q47. C

Explanation:

Statement 1 is not correct: The High Court under Section 482 of the CrpC has the power to quash an FIR even after filing of Charge Sheet by the prosecution. In India, an FIR can be quashed under the provisions of the Code of Criminal Procedure (CrPC) and not specifically under the Indian Penal Code (IPC).

Statement 2 is correct: When an individual or accused wishes to seek the quashing of an FIR, **they can file a petition under Section 482** of the CrPC in the relevant **High Court**.

Statement 3 is correct: Proceedings in heinous offences, like murder or rape cases, cannot be quashed even if the victims or their families settle the dispute with the accused. Heinous and serious offences involving mental depravity or offences such as murder, rape and dacoity cannot appropriately be quashed. Such offenses are, truly speaking, not private in nature but have a serious impact upon society.

Statement 4 is correct: Petitions under Section 482 CrPC are not maintainable for challenging the proceedings under Section 12 of the Domestic Violence Act. Q48. **A**

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- Recent data from NASA shows splitting of South Atlantic Anomaly.
- South Atlantic Anomaly (SAA), also called as 'dent' in Earth's Magnetic Field is an unusually weak spot in the Earth's Magnetic Field that allows charged particles from Sun to dip closer to the Earth's surface than normal. Hence, statement 1 is not correct and statement 2 is correct.
- o It is observed over South America and the southern Atlantic Ocean.
- Recent data shows that SAA is expanding westward and splitting into two lobes which can result in weakening of magnetic field and can impact:
- **Low-Earth orbit satellites** that travel through SAA will get hit by solar particles which can result in a short circuit and further lead to permanent damage.
- o **International Space Station,** which is in low-Earth orbit, instruments will also be impacted.
- **SAA** arises from two features of Earth's core: The tilt of its magnetic axis, and the flow of molten metals within its outer core.
- o So far, **SAA degradation has not caused any visible impacts** on Earth's surface.
- Earth's magnetic field **acts like a protective shield around the planet**, repelling and trapping charged particles from the Sun.
- Magnetic field of Earth is due to metallic and liquid outer core, around 3,000 km below our feet.

Q49. C

- Warli Paintings expresses daily and social events of Warli tribe of Maharashtra. Hence, statement
 1 is correct.
- These paintings do not depict mythological characters or images of deities, but depict social life.
 Hence, statement 3 is correct.
- Images of human beings and animals, along with scenes from daily life are created in a loose rhythmic pattern.
- Paintings depict scenes of human figures engaged in activities like hunting, dancing, sowing and harvesting.
- In Warli paintings a series of dots and dashes make one line. Hence, statement 2 is correct.

Women are mainly engaged in the creation of these paintings.

Q50. Answer-(b)

Statement 1 is correct: The system of assignment of revenue of a particular territory to the nobles for their services to the state continued under the Mughals also. During Akbar's period all the territory was broadly divided into two: Khalisa and Jagir. The revenue from the first went to the imperial treasury, and that from Jagir was assigned to Jagirdars in lieu of their cash salary. Salary entitlements of mansabdars were calculated on the basis of their Zat and Sawar ranks. The salary was paid either in cash (in that case they were called Naqdi) or through the assignment of a Jagir, the latter being the preferable mode.

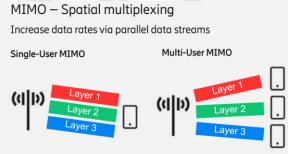
Statement 2 is not correct: None of the assignments was permanent or hereditary. The Emperor could shift part or the entire Jagir from one part of the imperial territory to another at any time. The ratio between Jagir and Khalisa kept fluctuating during the Mughal rule.

Statement 3 is correct: Amin was posted in each suba to see that Jagirdars were following imperial regulations. Faujdar used to help the Jagirdas if they faced any difficulty in the collection of revenue.

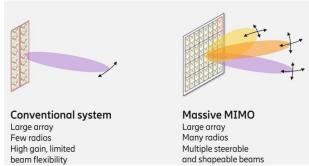
Q51. Answer: b

The **MIMO** (Multiple-Input Multiple-Output) is a wireless communication technology for future 5G wireless networks. It uses a large number of antennas to significantly enhance the throughput of current wireless systems and also has the ability to support a large number of users.

Statement 2 is correct: MIMO technology uses Special multiplexing in which multiple data streams can either go to one device (called single-user MIMO) or split among different devices (called multi-user MIMO). With single-user MIMO (SU-MIMO), all the transmit antennas are aimed at a single receiver increasing its capacity. But in Multi-user MIMO multiple antennas focus on multiple receivers, increasing capacity for more than one receiver. Massive MIMO is essentially MU-MIMO with a sufficiently high number of antennas located at a base station propagating multiple data streams of radio waves at the same time and frequency connecting the individual mobile devices. It does not employ a single large beam of radio wave propagated single antenna, as used in traditional cellular base stations.



Statement 3 is correct: 'Beamforming' is a method to point several antennas towards the same device, rather than having the signal propagate in all directions, as is typical. 'Three-dimensional (3-D) beamforming' directs both horizontal and vertical beams of radio waves from the cell tower antenna towards the user (Mobile devices, etc.) to greatly improve link quality in terms of signal-to-interference-and-noise-ratio (SINR) which translates into better network coverage, reduced interference across users in different beams, thereby improving signal quality (SINR). The purpose of beamforming is to amplify transmitted/received radio signals more in some directions than others thereby increasing network bandwidth over a particular region.



Statement 1 is not correct: This technology is not used in the Giant Metrewave Radio Telescope (GMRT) located in pune in measurement of the cosmic Gravitational Waves.

Q52. Answer: (a)

Statement 1 is correct: Platform as a service (PaaS) is a complete development and deployment environment in the cloud, which provides resources such as servers, storage, networking, software tools, cloud-enabled enterprise applications, business intelligence (BI) services, database management systems, etc, on a pay-as-you-go basis. Users need not to establish their own servers and storage facilities, instead they can access it over a secure Internet connection anywhere in the world. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating enabling users to design, build and update mobile applications as per their requirement.

Statement 2 is not correct: PaaS buyers can develop and deploy custom applications on the platform and personalise the User interface, but the **Operating System software is managed by the provider.**Q53. **Answer: (a)**

Statement 1 is correct: Active Pharmaceutical Ingredients (API) are any substances or mixtures of substances which are used in the manufacture of a medicine and becomes an **biologically active component of that medicine.** Such substances are i**ntended to furnish pharmacological activity** or other direct effect in the diagnosis, cure, mitigation, treatment or prevention of disease and to affect the structure and function of the body.

Statement 2 is not correct: APIs can be **natural as well as synthetic chemical-based active compounds** that are usually found in therapeutic and veterinary drugs.

Q54. **B**

Lucknow Municipal Corporation (LMC) recently issued municipal bonds. Ahmedabad was the first city
in south Asia to launch a municipal bond in 1998. Various other cities including Amravati,
Vishkhapatnam, Surat, Bhopal, Indore, Pune etc. have issued municipal bonds in the past. Hence,
statement 1 is not correct.

Municipal Bonds

- A municipal bond is a kind of debt instrument where investors give loans to local Urban Local Bodies (ULBs). It helps to raise funds from the stock market. Bidding takes place on an electronic trading platform after the bond is listed on the exchange. **Hence, statement 2 is correct.**
- Municipal bonds are issued by civic bodies for specific projects and usually have a 10-year tenure.
- The ULB pays the annual interest on the bonds to the investor at the decided rate.
- The face value (cost) of each instrument slot (piece) of a municipal bond is a minimum of Rs 10 lakh.
- Bonds are issued to institutional and high net worth individuals. It can be subscribed to (purchase) by a single investor or multiple investors. **Hence, statement 3 is correct.**

Need For Municipal Finance

• According to the World Bank, the scale of urbanisation in India is only 33%, whereas the size of the urban population is about 429 million – much larger than that of many other countries. Although it is an indicator of positive development, a host of challenges also accompanies rapid urbanisation.

Benefits of Municipal Bonds

- The difference between a bank loan and a municipal bond is that an institution can issue a bond only if it has favourable credit ratings.
- The bond also increases the number of investors available to the civic body, as compared to a loan from a single bank.
- Bonds lead to transfer of funds from the Centre, increase in transparency and efficient revenue generation.

Q55. A

- The Prime Minister recently inaugurated the 351-km 'New Bhaupur- New Khurja section' in Uttar Pradesh of the Eastern Dedicated Freight Corridor (EDFC). He also inaugurated the EDFC's Operation Control Centre (OCC) at Prayagraj, Uttar Pradesh.
- The OCC will be the command centre for the entire route of the EDFC and will control and monitor all systems, including train operation and power supply system. It is said to be one of the largest control centres in the world.

Dedicated Freight Corridor

- The Dedicated Freight Corridor consists of **two arms** Eastern Dedicated Freight Corridor (EDFC) and Western Dedicated Freight Corridor (WDFC). **Hence, statement 1 is correct.**
- The over 1800-km long **Eastern DFC** starts at Sohnewal (Ludhiana) in Punjab and ends at Dankuni in West Bengal. It passes through Haryana, Uttar Pradesh, Bihar and Jharkhand.
- The other arm is **Western DFC** of around 1500 km, from Dadri in Uttar Pradesh to Jawaharlal Nehru Port in Mumbai, touching all major ports along the way. It passes through the states of Haryana, Rajasthan, Gujarat and Maharashtra.
- There is also a section under construction between Dadri and Khurja to connect the Eastern and Western arms.
- The DFC is being constructed by the Dedicated Freight Corridor Corporation of India Limited (DFCCIL).
 DFCCIL has been set up as a special purpose vehicle to build and operate dedicated freight corridors.
 Hence, statement 2 is not correct.
- The World Bank is funding majority of the EDFC and the WDFC is being funded by the Japan International Cooperation Agency.

Benefits of DFC

- Around 70% of the freight trains currently running on the Indian Railway network will shift to the freight corridors after its completion and freight trains will run three times faster on the DFC.
- This will improve the punctuality of passenger trains as well as freight trains and create space for more passenger trains.
- As tracks on DFC are designed to carry heavier loads, they will be able to transport twice the amount
 of freight by running double-decker trains.
- Since freight trains will reach on time and carry more loads, it will bring down the transportation costs, leading to reduction in cost of various goods.
- The boost in connectivity with the development of the freight corridor will also help Kisan Rail and farmers to transport their harvest on time.

• It will also increase the ease of doing business and attract greater foreign investment.

Q56. Answer-(c)

Statement 1 is correct: The Patachitra is the traditional painting of Odisha. The word is derived from Sanskrit word "pata" which means canvas and "chitra" means picture. The Patachitras are oblong, stiff and glazed pieces of painting.

Statement 2 is correct: The traditional offering in a temple is called a pat. These icon paintings are painted on the wall as well as cotton and tussar cloth. The paintings on cloth are very delicate drawings drawn by the Mahapatras and Moharana caste groups. The painter is called the patachitrakar for whom the painting of a Patachitra is a religious experience as well as a means of satisfying his aesthetic and creative urges.

Statement 3 is correct: The Patachitra paintings of odisha are dedicated to Lord Jagannath of Puri. The main idols of Lord Jagannath, Balabhadra and Subhadra in the temple are made of wood and they are ceremoniously taken out of the temple every year in rath-yatra.

Q57. **Answer: (b) Explanation:**

In the human body, cell growth and differentiation is highly controlled and regulated. In cancer cells, there is breakdown of these regulatory mechanisms. Normal cells show a property called contact inhibition by virtue of which contact with other cells inhibits their uncontrolled growth. Cancer cells appear to have lost this property hence continuously divide giving rise to masses of cells called **Tumors.**

Tumors are of two types as follows:

- Benign Tumors: These tumors normally remain confined to their original location and do not spread
 to other parts of the body and cause little damage.
- Malignant Tumors: These tumors contain a mass of proliferating cells called neoplastic or tumor cells which grow very rapidly, invading and damaging the surrounding normal tissues. Cells sloughed from such tumors reach distant sites through blood, and wherever they get lodged in the body, they start a new tumor there. This property called Metastasis is the most feared property of Malignant Tumors.

Q58. Answer-(c)

The India-Middle East-Europe Economic Corridor (IMEC), unveiled at the G-20 summit in 2023, has been overlooked. The lack of progress beyond Memorandums of Understanding (MoUs) is a contributing factor, with no real investments or operational developments.

Additionally, the ongoing Israel-Palestine conflict has halted the normalization process between Arab nations and Israel, which is crucial for this multi-country project. A significant obstacle is the strategic Strait of Hormuz, through which all IMEC trade passes.

Given Iran's influence over this narrow passage, the threat of trade interruptions is considerable. To circumvent this, some suggest bringing Oman into the IMEC framework to route trade away from Iranian territory. This, however, would introduce new delays as it necessitates the construction of fresh ports and railways in **Oman to link with Saudi Arabia.**\

Q59. C

National High Speed Rail Corporation Limited will be adopting Light Detection and Ranging Survey
(LiDAR) technique using Laser enabled equipment mounted on a Helicopter for conducting ground
survey for the proposed Delhi-Varanasi High Speed Rail (HSR) corridor.

- Lidar is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. Hence, statement 1 is correct.
- These light pulses—combined with other data recorded by the airborne system generate precise,
 three-dimensional information about the shape of Earth and its surface characteristics.
- A Lidar instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
 Airplanes and helicopters are the most commonly used platforms for acquiring Lidar data over broad areas.
- Lidar systems allow scientists and mapping professionals to examine both natural and manmade environments with accuracy, precision, and flexibility. Hence, statement 2 is correct.
- It is also being used to produce more accurate shoreline maps, make digital elevation models for
 use in geographic information systems, to assist in emergency response operations, and in many other
 applications.

Q60. **B**

- Election Commission (EC) has approached the Law Ministry to permit Non Resident Indians (NRI) to cast their votes from overseas through postal ballots.
- According to a UN report of 2015, India's diaspora population is the largest in the world at 16 million people. Registration of NRI voters, in comparison, has been very low: a little over one lakh overseas Indians registered as voters in India. In last Lok Sabha elections, roughly 25,000 of them flew to India to vote.
- The Commission informed the government that it is "technically and administratively ready" to extend the **Electronically Transmitted Postal Ballot System (ETPBS)** to voters abroad for elections next year in Assam, West Bengal, Kerala, Tamil Nadu and Puducherry.

How Will Voting By Postal Ballots Work For NRIs?

- According to the EC proposal, any NRI interested in voting through the postal ballot in an election will have to inform the Returning Officer (RO) not later than five days after the notification of the election.
 On receiving such information, the RO will dispatch the ballot paper electronically. Hence, statement 1 is not correct and statement 2 is correct.
- The NRI voters will download the ballot paper, mark their preference on the printout and send it back along with a declaration attested by an officer appointed by the diplomatic or consular representative of India in the country where the NRI is resident. Hence, statement 3 is correct.
- It's not clear, at this moment, if the voter will return the ballot paper herself through ordinary post or drop it off at the Indian Embassy, which may then segregate the envelopes constituency-wise and send them to the Chief Electoral Officer of the state concerned for forwarding to the RO.

Q61. Answer - (b)

Statement 1 is correct: The Special Window for Affordable and Mid-Income Housing (SWAMIH) Investment Fund I is India's largest social impact fund specifically formed for completing stressed and stalled residential projects.

Statement 2 is correct: A Project should satisfy the following criteria to be eligible for funding: (1) Is stalled or likely to be stalled if no funding is made available (2) Atleast 90% of the available FSI / FAR is being developed as Affordable Housing units or Mid-Income Housing units; (3) Is networth positive – value of sold receivables plus unsold inventory is greater than cost to complete construction and to service the investment by the Fund; (4) **Has completed at least 30% of the construction and development**; (5) Requires last mile funding – sufficient to complete construction.

Statement 3 is not correct: The Fund is sponsored by the **Ministry of Finance**, Government of India, and is managed by **SBICAP Ventures Ltd**., a State Bank Group company. The Fund has no precedent or comparable peer fund in India or in the global markets.

Particulate pollutants are tiny solid particles or liquid droplets suspended in the air.

Particulate matter, also known as particle pollution, encompasses a diverse blend of solid particles and liquid droplets present in the atmosphere. These minute particles, observable solely through an electron microscope, consist of various substances including sulfates, nitrates, black carbon, particle-bound water, metals like cadmium, copper, nickel, and zinc, as well as hydrocarbons. Additionally, biological elements such as allergens like pollen and dust mites, along with microbial compounds such as fungi, are also considered part of particulate matter.

Non-particulate matter, also referred to as outdoor particulate matter, entails tiny liquid droplets or solid particles (pollutants) with no distinct particles. Examples include ozone, carbon monoxide, and lead, among others. Hydrogen sulfide is a gas and not a particulate pollutant.

Q63. **D**

Q62. **B**

- Recently, India's Chief of Defence Staff (CoDS) remarked "the world is witnessing a race for strategic bases in the Indian Ocean Region (IOR) and it is only going to gain momentum in the times to come".
- Oversea bases are the first mechanism of mass networks. It helps in protection of commercial interests, aligning with friendly regimes, and expressing dominance in the region.

Reasons underlining India's importance in the IOR are as follows

- India has a privileged geostrategic location: India is geographically located at the Ocean's centre. It
 has over 7,500 Km of coastline. 95% of India's trade by volume and 68% of trade by value come via the
 Indian Ocean.
- Nearly 80% of India's crude oil requirement is imported by sea via the Indian Ocean. Thus, India's fate is inextricably linked with the IOR. Global powers are hedging on India's obligations for a peaceful and rule based IOR.
- Shared interests in the IOR: The global Interest overlap with India's objectives outlined under SAGAR
 (Security and Growth for All in the Region). These include preserving freedom of navigation for
 commercial shipping, sustainably and equitably harnessing the Indian Ocean's natural resources,
 Countering piracy, terrorism, smuggling, and illegal weapons proliferation etc.
- India has the capability to counter the growing clout of China: Relative to other countries in the
 region, India has advantages in terms of economic and military capability. India has already taken
 various steps for democratic governance of the IOR. These include
- Indian Ocean Naval Symposium (IONS): It is regional forum of Indian Ocean littoral states, represented by their Navy chiefs similar to Western Pacific Naval Symposium. It seeks to "increase maritime cooperation among navies" of the Indian Ocean littoral states.
- o **Indian Ocean Rim Association (IORA):** It emphasizes on maritime security, trade, cultural promotion, tourism, resource management and governance.
- Humanitarian And Disaster Relief Operations (HADAR): For decades India has positioned itself
 as the first responder to humanitarian crises in the IOR. This also includes rescuing citizens of India
 and neighbouring countries from conflict zones.
- Maritime Domain Awareness (MDA): India aspires to become net security provider in the IOR. It has taken following initiatives in this direction.

- ➤ Information Management and Analysis Centre (IMAC): Jointly managed by the Indian Navy and Coast Guard, it is the nodal centre of the National Command Control Communications and Intelligence (NC3) Network. It provides information and surveillance over India's entire coastline, along with its outlying islands, in real time.
- Information Fusion Centre for the India Ocean Region (IFC-IOR): It aims to provide regional MDA by fusing large data sets originating from multiple sources.
- ➤ White shipping agreement allows Indian Navy exchange data on commercial traffic. This helps create a better picture of movements and vessels at sea.
- Hence, option (d) is correct.

Q64. Answer-(b)

Rammohan Roy published his first philosophical work, **Tuhfat-ul-Muwahhiddin** in 1805 in which he analyzed the major religions of the world in the light of 'reason' and 'social comfort'. He denied that religion was merely a matter of faith outside reason and attempted to expose the myth of miracles associated with it. Q65. **C**

- India's first Lithium refinery which will process Lithium ore to produce battery-grade material will be set up in Gujarat. Hence, statement 1 is correct.
 - Manikaran Power Limited, will set up this refinery.
- Lithium is a rare element not usually found in India.
- The company will be importing Lithium ore from Australia and will be processing it here.
- With India poised to become one of the largest electric car markets of the world, the refinery would help India reduce import bill on imported Lithium-Ion Battery.
 - Import of Lithium-ion batteries quadrupled to 712 million batteries in 2018 from 175 million in
 2016
 - China, Hong Kong and Vietnam were the leading sources of imports.
- Lithium an alkali metal is the **lightest of the solid elements**. It is soft, white, and lustrous.
- It is **found in brine deposits and as salts in mineral springs**; its concentration in seawater is 0.1 part per million. **Hence, statement 2 is correct.**
- It constitutes about 0.002 percent of Earth's crust.
- It is also found in minerals and ores like: petalite, lepidolite amblygonite etc.
- A significant proportion of lithium reserves are located in South America's "lithium triangle" an area encompassing parts of Chile, Argentina and Bolivia (largest reserves of lithium in the world).
- Australia is largest producer of lithium in the world.

Q66. B

- Recently, the Singapore Food Agency (SFA) approved the sale of a lab-grown meat product. This is the
 first-time a cultured meat has been cleared for sale anywhere in the world. Hence, statement 1 is
 not correct
- In lab-grown or cultured meat scientists use the animal's stem cells to create meat rather than slaughtering animals.

- Stem cells are the building blocks of cells and tissues, and by feeding them amino acids and carbohydrates, the muscle cells will be multiplied and grown in the lab. Once muscle fibers start growing, the result is an artificially created meat that resembles actual meat in terms of appearance, texture, and nutrient profile.
- Lab-grown meat is different from plant-based meat as latter is made from plant sources such as soy or pea protein, while cultured meat is grown directly from cells in a laboratory. Hence, statement 2 is correct.

Advantage

- Cultivated beef could **reduce land use** by more than 95%, **climate change emissions** by 74-87% and **nutrient pollution** by 94%. **Hence, statement 3 is correct.**
- It is created in clean facilities thus, **eliminating the risk of contamination by pathogens** such as salmonella and E coli, which may be present in traditional slaughterhouses and meatpacking factories.
- Due to Covid-19 and widespread fears about zoonotic diseases, especially African swine fever and highly pathogenic avian influenza, cultured meat provides an opportunity to the alternative meat industry.
- It **does not require antibiotics**, **unlike animals raised for meat** thereby reducing the threat posed to public health by growing antibiotic resistance.

Q67. Answer: C

Statement 1 is correct: As per **Section 8(4) of the RBI Act 1934**, The Governor and Deputy Governors **hold office for periods not exceeding five years.**

Statement 2 is correct: The term of the governor may be fixed by the government at the time of his appointment. For example, The Government of India has extended the tenure of Reserve Bank of India (RBI) governor Shaktikanta Das for a period of three years, through an order.

Statement 3 is correct: There is no specific qualification mentioned under the RBI Act for the governor. Persons with different educational backgrounds were selected as Governor. But they had either Economics/Financial management experience with the government (Economic Affairs Secretary/Financial Secretary etc.,) or were Economists. **This means that the qualification for Governor is a matter of convention rather than a rule**.

Q68. Answer: (b)

Statement 1 is not correct: The Constitution lays down a special procedure for the passing of Money Bills in the state legislature. As per Article 198 of the Indian constitution A Money Bill cannot be introduced in the legislative council. **It can be introduced in the legislative assembly only.**

Statement 2 is correct: It can be introduced only on the recommendation of the **governor**. A Money Bill shall not be introduced in a Legislative Council. After a Money Bill has been passed by the Legislative Assembly of a State having a Legislative Council, it shall be transmitted to the Legislative Council for its recommendations, and the Legislative Council shall within a period of fourteen days from the date of its receipt of the Bill return the Bill to the Legislative Assembly with its recommendations, and the Legislative Assembly may thereupon either accept or reject all or any of the recommendations of the Legislative Council Q69. **Answer-(d)**

Statement 1 is not correct: As per the clause (1) of **article 280 of the Constitution,** the Finance Commission is to be constituted every fifth year or earlier by the president of India. It is a **constitutional body**.

Statement 2 is not correct: Its recommendation is **not binding** on the government of India. It is only **advisory** in nature.

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Statement 3 is not correct: It suggests the distribution of non-planned resources between centre and states.

It shall be the duty of the Commission to make recommendations to the President as to-

- 1. the distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them, and the allocation of such proceeds between states with their respective shares
- 2. the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India.
- 3. the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats in the State on the basis of the recommendations made by the Finance Commission of the State.
- 4. the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State.
- 5. any other matter referred to the Commission by the President in the interests of sound finance.

Q70. Answer- (c)

The crowding out effect is an economic hypothesis that claims that more public sector expenditure reduces or eliminates private sector spending.

This is due to the increased borrowing costs and lower income that might arise when the government raises taxes or borrows by selling Treasuries to generate revenue for its own spending.

The government needs more revenue in order to spend more. It acquires it either by borrowing money via the sale of Treasury securities or by increasing taxes. Reduced income and spending by people and corporations may result from higher taxes.

Q71. C

The Cabinet, composed of the 'senior most ministers' whose responsibilities transcended departmental boundaries into the entire field of administration, is a smaller body and the most powerful body in the government.

Statement 1 is correct: It is the body which determines government policy for presentation to the Parliament. The cabinet meets regularly, as it is a decision-making body. It is assisted by the cabinet secretariat that is headed by a senior member of the civil services, the cabinet secretary.

Statement 2 is correct: It is responsible for implementing government policy. Each Ministry is responsible for acting on its own for expeditious implementation of Government policies, plans and programmes, where inter-Ministerial cooperation is involved.

Statement 3 is correct: It carries out interdepartmental coordination and cooperation.

Statement 4 is not correct: Standing Committees is to scrutinise the allocation of funds to the ministries/departments under their supervision. These Committees examine the: (i) amount allocated to various programmes and schemes under the ministry, and (ii) trends of utilisation of the money allocated to the ministry.

Q72. Answer: (b)

Statement 1 is not correct: The Government has set up the Urban Infrastructure Development Fund (UIDF). It was announced by the Finance Minister in the budget **2023-24.**

Statement 2 is correct: Urban Infrastructure Development Fund (UIDF) will be established through **use of priority sector lending shortfall**.

Statement 3 is correct: The Fund will be managed by the **National Housing Bank,** and will be used by public agencies to create urban infrastructure in Tier 2 and Tier 3 cities on the basis of given guidelines.

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Q73. B

- The Ministry of Shipping recently launched 'SAROD-Ports' (Society for Affordable Redressal of Disputes - Ports). It is a dispute redressal mechanism for all kinds of disputes related to maritime sector.
- It is similar to the provision available in the highway sector in the form of SAROD-Roads constituted by the National Highways Authority of India (NHAI).
- In the last two decades, there has been an increasing shift towards PPP projects and landlord port models by the major ports, where terminals for specific cargo segments are developed and operated by private players on Build-Operate-Transfer basis.
- However, in many cases there have been disputes with the major Port Trust related to terms of
 concession including revenue share, meeting of guaranteed standards and volumes, facilities and
 maintenance work to be done by the Port Trust etc.
- These disputes in many instances have dragged on for several years, as the parties may first go for arbitration and then fight the cases in higher courts. This results in high arbitration and litigation costs for both the ports as well as the private players.
- SAROD ports will advise and assist in the settlement of disputes through arbitrations in the maritime sector, including ports and shipping sector in major port trusts, non-major ports, including private ports, jetties, terminals and harbours. Hence, statement 1 is correct.
- It will also cover disputes between granting authority and Licensee /Concessionaire/Contractor and disputes between Licensee/Concessionaire and their contractors arising out of and during the course of execution of various contracts. Hence, statement 2 is not correct.
- SAROD-Ports will consist members from the Indian Ports Association (IPA) and Indian Private Ports and Terminals Association (IPTTA).

Q74. **B**

Alauddin Khalji started his campaign from **Delhi** for the **expansion of his territories** by capturing the **Gujarat** by **1299**, **Ranthambore** in **1301**, **Chittor** in **1303**, **Mandu** in **1305**, **Dwarasamudra** by around **1310**, **Warangal** in **1311**, and lastly **Thanjavur** in **1311**.

O75.A

Statement 1 is not correct: Delimitation literally means the act or process of fixing limits or boundaries of territorial constituencies in a country or a province having a legislative body. The job of delimitation is assigned to a high power body. Such a body is known as Delimitation Commission or a Boundary Commission. In India, such Delimitation Commissions have been constituted 4 times – in 1952 under the Delimitation Commission Act, 1952, in 1963 under Delimitation Commission Act, 1962, in 1973 under Delimitation Act, 1972 and in 2002 under Delimitation Act, 2002. **Delimitation Commission consist of three members and it is not a constitutional body.**

Statement 2 is not correct: As soon as may be after the commencement of this Act, the Central Government shall constitute a Commission to be called the Delimitation Commission which shall consist of three members as follows:--

- (a) one member, who shall be a person who is or has been a Judge of the Supreme Court, to be appointed by the Central Government who shall be the Chairperson of the Commission;
- (b) the Chief Election Commissioner or an Election Commissioner nominated by the Chief Election Commissioner, ex officio: and
- (c) the State Election Commissioner of concerned State, ex officio.

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Statement 3 is correct: As per Section 7 of the Act the Commission can determine its own procedure and, in the performance of its functions, have all the powers of a civil court under the Code of Civil Procedure, 1908 while trying a suit, in respect of the following matters, namely: summoning and enforcing the attendance of witnesses; requiring the production of any document; and requisitioning any public record from any court or office. The Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court. These orders come into force on a date to be specified by the President of India on this behalf. The copies of its orders are laid before the House of the People and the State Legislative Assembly concerned, but no modifications are permissible therein by them.

Q76. C

Explanation:

Statement 1 is correct: PM Gati Shakti National Master Plan (NMP) **is a multimodal connectivity infrastructure to various economic zones**. PM Gati Shakti National Master Plan provides a comprehensive database of the trunk & utility infrastructure, ongoing & future projects of various Infrastructure and Economic Ministries/Departments of Central Government and States/UTs.

Statement 2 is correct: PM Gati Shakti Scheme is a **Rs.100 lakh-crore project** for developing holistic infrastructure. It will help raise the global profile of local manufacturers and help them compete with their counterparts worldwide. It also raises possibilities of new future economic zones.

Statement 3 is correct: PM GatiShakti National Master Plan has been developed as a Digital Master Planning tool by BISAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics) and has been prepared in dynamic Geographic Information System (GIS) platform wherein data on specific action plan of all the Ministries/Departments have been incorporated within a comprehensive database. Dynamic mapping of all infrastructure projects with real time updation will be provided by way of a map developed by BISAG-N.

Q77. Answer-A

Statement 1 is not correct: A Government Security (G-Sec) is a tradeable instrument issued by the Central Government or the State Governments. It acknowledges the Government's debt obligation. Statement 2 is not correct: In India, the Central Government issues both, treasury bills and bonds or dated securities while the State Governments issue only bonds or dated securities, which are called the State Development Loans (SDLs). G-Secs carry practically no risk of default and, hence, are called risk-free gilt-edged instruments.

Statement 3 is correct: Treasury bills or T-bills, which are money market instruments, are short term debt instruments issued by the Government of India and are presently issued in three tenors, namely, 91 day, 182 day and 364 day. 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. For example, a 91 day Treasury bill of ₹100/- (face value) may be issued at say ₹ 98.20, that is, at a discount of say, ₹1.80 and would be redeemed at the face value of ₹100/-.

Q78. **Answer-(b)**

Context: Low water levels have forced the Panama Canal authorities to reduce the number of crossings, impacting the smooth flow of goods in one of the world's busiest trade routes.



The shortest maritime route from Ecuador to Cuba would be through the Panama Canal. This route provides a direct path between the Pacific and Atlantic Oceans, significantly reducing the distance and time required for ships traveling between Ecuador and Cuba compared to the other canals listed. The Panama Canal is the most practical choice for a cargo ship to cover the space with the minimum route length.

Q79. Answer: c

Statement 1 is correct: The ear can be divided into the outer ear, the middle ear and the inner ear. The middle ear contains three ossicles called malleus, incus and stapes. The fluid filled inner ear is called the labyrinth, and the coiled portion of the labyrinth is called cochlea. The cochlea houses the organ of Corti, which contains hair cells acting as auditory receptors and is situated on the basilar membrane. When vibrations travel through the ear and cause the fluid within the cochlea to move, a wave propagates along the basilar membrane. Hair cells, positioned atop the basilar membrane, are stimulated by this wave. Hair cells located near the wider end of the cochlea detect higher-pitched sounds, such as an infant crying, while those closer to the center perceive lower-pitched sounds, like a large dog barking.

Statement 2 is correct: An Eustachian tube connects the middle ear cavity with the pharynx thereby **helping in equalizing the pressures on either side of the eardrum.** Yawning and swallowing cause contraction of the muscles connected to the Eustachian tube, enabling the tube to open to small amounts of air. **With equalized air pressure, the eardrum can vibrate appropriately and transmit sound.** Additionally, by functioning as micro turbinates, mucosal folds in the Eustachian tube lumen work in conjunction with the surface cilia to **promote the clearance of secretions from the middle ear to the nasopharynx.**

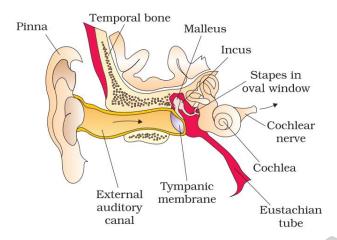


Figure: Diagrammatic view of ear

Q80. Answer-B

Context: Recently, The International Coral Reef Initiative (ICRI) launched the Coral Reef Breakthrough initiative.

Statement 1 is not correct: The goal of this international collaboration between nations and organizations is to protect coral reefs and associated ecosystems globally.

Eight governments—Australia, France, Japan, Jamaica, the Philippines, Sweden, the United Kingdom, and the United States of America— founded the Initiative in 1994. India is **not** a founding member but **ICRI has 101 members, including 45 countries (India is one of them).**

Statement 2 is correct: It was announced at the First Conference of the Parties of the Convention on Biological Diversity in December 1994, and at the high level segment of the Intersessional Meeting of the U.N. Commission on Sustainable Development in April 1995.

Statement 3 is correct: The International Coral Reef Initiative (ICRI), a network including 45 countries who represent over 75% of the world's coral reefs, has launched the Coral Reef Breakthrough in partnership with the Global Fund for Coral Reefs (GFCR) and the UN Climate Change High-Level Climate Champions. The Coral Reef Breakthrough aims to secure the future of at least 125,000 square kilometres of shallow-water tropical coral reefs with investments of at least US\$12 billion to support the resilience of more than half a billion people globally by 2030.

Q81. Answer-(c)

Statement 1 is correct: Invasive alien species are plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. In particular, they impact adversely upon biodiversity, including decline or elimination of native species - through competition, predation, or transmission of pathogens - and the disruption of local ecosystems and ecosystem functions.

Invasive alien species, introduced and/or spread outside their natural habitats, have affected native biodiversity in almost every ecosystem type on earth and are one of the greatest threats to biodiversity. Since the 17th century, invasive alien species have contributed to nearly 40% of all animal extinctions for which the cause is known (CBD, 2006).

Statement 2 is correct: Native to the Amazon basin, water hyacinth (*Eichhornia crassipes*) has invaded tropical habitats worldwide spreading to more than 50 countries on five continents. Water hyacinth

blocks waterways, decimates aquatic wildlife and the livelihoods of local people and creates ideal conditions for disease and its vectors.

Statement 3 is correct: The Bern Convention is managed by the Council of Europe and includes a wide range of provisions and recommendations for Parties to control the introduction of alien species and for them to identify adequate management and control measures. The Bern Convention has produced The European Strategy on Invasive Alien Species as well as a report on identification of non-native freshwater fishes established in Europe and assessment of their potential threats to the biological diversity. The Standing Committee to the Bern Convention has commissioned legal research and analysis, developed recommendations and promoted the development of more effective legal measures for IAS issues.

Q82. Answer- (a)

Statement 1 is not correct: In order to qualify, **green box subsidies must not distort trade, or at most cause minimal distortion**. They have to be government-funded (not by charging consumers higher prices) and must not involve price support.

They tend to be programmes that are not targeted at particular products, and include direct income support for farmers that are not related to (are "decoupled" from) current production levels or prices. They also include environmental protection and regional development programmes.

Statement 2 is correct: Blue box is "amber box with conditions" — conditions designed to reduce distortion. Any support that would normally be in the amber box, is placed in the blue box if the support also requires farmers to limit production.

At present there are no limits on spending on blue boxes.

Statement 3 is not correct: In the Amber box nearly all domestic support measures considered to distort production and trade (with some exceptions) fall into the amber box, which is defined in Article 6 of the Agriculture Agreement as all domestic supports except those in the blue and green boxes.

These include measures to support prices, or subsidies directly related to production quantities. These supports are subject to limits. "De minimis" minimal supports for both product-specific and non-product-specific support are allowed, defined as a share of the value of agricultural production. This threshold is generally 5% of the value of agricultural production for developed countries, 10% for most developing countries — although some WTO members agreed to a different level when they negotiated to join the WTO. Furthermore, 32 WTO members with larger subsidies than the de minimis levels at the beginning of the post-Uruguay Round reform period committed to reducing these support levels.

Statement 1 is correct: According to Article **148 of the Indian Constitution:** There shall be a Comptroller and Auditor General of India who shall be appointed by the President by warrant under his hand and seal and shall **only be removed from office in like manner and on like grounds as a Judge of the Supreme Court**.

Statement 2 is not correct: Independence of the CAG from the Executive is inherent in Article 148 of the Constitution. **No one represents CAG in Parliament.**

Statement 3 is not correct: The Reserve Bank of India does not fall under the audit jurisdiction of the Comptroller and Auditor General. **RBI can't be audited by CAG**.

Q84. Answer: (a)

Context: Controversy regarding the appointment Of Election Commissioners in the light of restructured committee to select them.

Statement 1 is correct: The Chief Election Commissioner and other Election Commissioners shall be appointed by the President by warrant under his hand and seal. The Chief Election Commissioner and other Election Commissioners shall be appointed from amongst persons who are holding or have held a post equivalent to the rank of Secretary to the Government of India and shall be persons of integrity, who have knowledge of and experience in management and conduct of elections.

Statement 2 is not correct: The election commissioners and the chief election commissioner of India enjoy the same salary, privilege **but not the security of tenure which has been given to a judge of supreme court**. Election commissioners can be removed by the president on the advice of the chief election commissioner.

Q85. C

The Government of India has created an institutional arrangement called the Health Technology Assessment in India (HTAIn) under the Department of Health Research (DHR) to facilitate the process of transparent and evidence-informed decision-making in the field of health. HTAIn appraises health interventions and technologies based on available data on resource use, cost, clinical effectiveness, and safety.

Statement 1 is correct: HTAIn is entrusted with the responsibility to analyze health technologies viz. medicines, devices and health programmes for its cost-effectiveness, clinical-effectiveness and equity issues.

Statement 2 is correct: Resource Centres have been established in Government research institutes to conduct HTA and other multi-centric studies allocated by HTAIn Secretariat. It contains medical research institutes and other educational centers, allowing other technological institutions like Indian Institute of Technology, Delhi and Indian Institute of Science, Bengaluru.

Statement 3 is correct: HTA studies aiming at maximising health in the population, **reducing out of pocket expenditure** (OOP) and **reducing inequity**.

Q86. Answer:(b)

Statement 1 is not correct: Babies with Severe Combined Immunodeficiency (SCID) may appear healthy at birth, but problems can start soon after such as failure to thrive, chronic diarrhea, frequent, often serious respiratory infections, oral thrush (a type of yeast infection in the mouth), other bacterial, viral, or fungal infections that can be serious and hard to treat.

Statement 2 is correct: 'Bubble baby syndrome', medically known as Severe Combined Immunodeficiency (SCID) **is a very rare genetic disorder that causes life-threatening problems with the immune system.** It is a type of primary immune deficiency and is known as "living in the bubble" syndrome because living in a normal environment can be fatal to a child who has it. It is caused due to the inherited mutations in genes of one or both birth parents.

Statement 3 is correct: SCID is a pediatric emergency. Without treatment, babies are not likely to survive more than one year. **The most common treatment is a stem cell transplant also called a bone marrow transplant.**

Q87. C

The HDI was created by the United Nations Development Programme (UNDP) to emphasize that
people and their capabilities should be the ultimate criteria for assessing the development of a country,
not economic growth alone. The HDI can also be used to question national policy choices, asking how

two countries with the same level of GNI per capita can end up with different human development outcomes.

- The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living.
- The HDI is the geometric mean of normalized indices for each of the three dimensions.
- The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean.
- Hence option (c) is the correct answer.

Q88. Answer-b

Option (a) is correct: Alluvial soils are widespread in the northern plains and the river valleys. These soils cover about 40 per cent of the total area of the country. They are depositional soils, transported and deposited by rivers and streams. The alluvial soils vary in nature from sandy loam to clay. Alluvial soil is more loamy and clayey in the lower and middle Ganga plain and the Brahmaputra valley. **The sand content decreases from the west to east.**

Option (b) is not correct: Chemically, the black soils are rich in lime, iron, magnesia and alumina. They also contain potash. But they lack in phosphorous, nitrogen and organic matter.

Option(c) is **correct:** Red soil develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern part of the Deccan Plateau. Along the piedmont zone of the Western Ghat, long stretch of area is occupied by red loamy soil. They are generally poor in nitrogen, phosphorous and humus. These soils show the **common presence of kaolinite clay minerals.**

Option (d) is correct: Forest soils are formed in the forest areas where sufficient rainfall is available. The soils vary in structure and texture depending on the mountain environment where they are formed. **In the snow-bound areas of the Himalayas, they experience denudation, and are acidic with low humus content.** The soils found in the lower valleys are fertile.

Q89. **D**

 Recently, Prime Minister raised the pitch for Simultaneous Elections to the Lok Sabha and State Assemblies.

About Simultaneous Elections (SE)

- It means structuring the Indian election cycle in a manner that elections to Lok Sabha and State Assemblies are synchronized together under which voters in a particular constituency vote for both on the same day. Hence, statement 3 is correct.
- SE were the **norm until 1967**. But following dissolution of some Legislative Assemblies in 1968 and 1969 and that of Lok Sabha in 1970, elections to State Assemblies and Parliament have been held separately. **Hence, statement 1 is correct.**
- Later, SE idea was **proposed by Election Commission in 1983**. It was also referred by Law Commission and NITI Aayog. **Hence, statement 2 is correct.**

• SE does not mean that voting across the country for Lok Sabha and State Assemblies happen on a single day. It can be conducted in a phase-wise manner and voters in a particular constituency vote for both State Assembly and Lok Sabha the same day. Hence, statement 4 is correct.

Q90. **B**

- Recently, the IMF economist Gita Gopinath stated that the global economy may be heading towards a liquidity trap.
- A liquidity trap is a contradictory economic situation in which interest rates are very low and savings
 rates are high, rendering monetary policy ineffective. It leads to a scenario where any additional money
 supply that is generated in the economy gets channelled towards savings rather than investment thus
 rendering the economy to remain at same liquidity level. Hence, statement 1 is not correct and
 statement 2 is correct.
- The economic situation created by the pandemic has led to following developments which indicate towards a liquidity trap:
- Very low interest rates: 60 per cent of the global -- including 97 per cent of advanced economies -central banks have pushed policy interest rates below 1 per cent. In one-fifth of the world, they are
 negative. As a result, central banks have little room to further cut interest rates if another shock
 strikes.
- **Global demand still sluggish:** Despite the extremely low interest rates, the global demand is still sluggish due to the impact of the COVID-19 pandemic.
- Threat of a potential currency war: Due to decrease in interest rates, money supply around the world would increase which can potentially trigger a currency war due sliding exchange rates in the trading arena.
- Effects reaching the developing world: Generally, the developing countries are unlikely to develop this problem due to high average interest rates. But recently, developing countries like Peru and Chile have almost brought the borrowing costs to zero due to their crashing economies, thus signalling a liquidity trap.

Q91. A

- Production-Linked Incentive or PLI scheme is a scheme that aims to give companies incentives on incremental sales (over FY 2019-20) from products manufactured in domestic units.
- The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country's reliance on imports from other countries.
- It aims at boosting domestic manufacturing of goods for domestic consumption, enhance exports and reduce dependence on imports. **Hence, statement 1 is not correct.**
- With regard to nature of the scheme, following can be cited as key features of the PLI Scheme:
 - The scheme is outcome-based, which means that incentives will be disbursed only after production has taken place. Hence, statement 2 is correct.
 - The calculation of incentives is based on incremental production at a high rate of growth.
 - o The scheme **focuses on size and scale** by selecting those players who can deliver on volumes.
 - The selection of sectors covering cutting-edge technology, sectors for integration with global value chains, job-creating sectors and sectors closely linked to the rural economy, is highly calibrated.

 Also, the design of the earlier PLI scheme for electronics is such that it is compatible with World Trade Organization commitments as the quantum of support is not directly linked to exports or value-addition.

Q92. A

Explanation:

In 2003, the Delhi Special Police Establishment Act, 1946, which governs agencies like the CBI, was amended. Under Section 6A, it was required to seek approval from the central government before investigating alleged offences under the Prevention of Corruption Act (PCA), 1988, if the employee in question held a rank higher than joint secretary.

The 'single directive' has remained a persistent obstacle in the battle against corruption, causing unwanted interference in the scrutiny of public officials. Despite being invalidated twice by the Supreme Court since 1997, it has reemerged in a modified form, now shielding all public servants, regardless of their rank.

Originally, the single directive referred to a series of directives issued by the Central government to the CBI, requiring prior authorization for investigations into public officials at the "decision-making level" – namely, joint secretary and above. It was introduced in 1969 but drew significant controversy when a revised version was issued in 1988 following the Bofors scandal, stipulating "prior consultation" and "government approval" for the CBI to launch investigations into corruption allegations.

Q93. A

- TX2 is the global award which was set up in 2010 in St. Petersburg Tiger Summit by international
 organizations working for tiger conservation like WWF, UNDP, IUCN, Global Tiger Fund, CATS and
 The Lion's Share.
- TX2 stands for "Tigers times two", signaling the goal set by 13 tiger range countries to double population of wild tigers by 2022. Hence, statement 1 is correct.
- TTCA are given in two categories:
- Tiger Conservation Excellence Award: Transboundary Manas Conservation Area (TraMCA)
 comprising Manas National Park in Assam and Royal Manas National Park in Bhutan won this
 award.
- Award recognises a site that has achieved excellence in two or more of five themes:
- > Tiger and prey population monitoring and research;
- effective site management;
- enhanced law enforcement and protection;
- community-based conservation;
- Habitat and prey management.
- TX2 Award: This award is given for efforts to increase tiger population and includes a financial grant to assist ongoing conservation.
- ➤ Pilibhit Tiger Reserve (PTR) in Uttar Pradesh won this award for doubling its population.PTR is important for connectivity across the vast Terai Arc Landscape of India and Nepal.
- > Its southern boundary is marked by the river Sharada and Khakra.
- Hence, statement 2 is not correct.

Q94. Answer-b

Context: Angola quit OPEC in December 2023 because its quota limits hindered the country's plans to stabilise crude production above 1 million barrels a day. The African nation's exit from the Organization of Petroleum Exporting Countries came after the cartel imposed a much lower output limit. The tighter cap was too much for Angola, which is making efforts to boost investment after many years of underinvestment and production decline.

Explanation

Angola, officially the Republic of Angola, is the seventh largest country in Africa in terms of size with an area of 1,246,700 sq km. Angola is located in the Atlantic coast of Southern Africa, to the South of the Equator, and its territory is bordered by the **Republic of Congo** and the **Democratic Republic of Congo** to the North, by the **Republic of Zambia** to the East, by the **Republic of Namibia** to the South, and by the Atlantic Ocean to the West. Its land border is 4.837 km long.



Q95. C

Statement 1 is correct: The **CBAM** will initially apply to **imports of certain goods and selected precursors** whose production is **carbon intensive** and at most significant risk of carbon leakage: **cement, iron** and **steel, aluminium, fertilizers, electricity** and **hydrogen**.

Statement 2 is correct: The **gradual phasing** in of **CBAM** over time will also allow for a **careful**, **predictable** and **proportionate transition for EU and non-EU businesses**, as well as for public authorities. During this period, **importers of goods** in the scope of the new rules will only have to **report greenhouse gas emissions** (GHG) **embedded in their imports** (direct and indirect emissions), without making any financial payments or adjustments. The enforcement date of CBAM is **1st October 2023**.

Statement 3 is correct: The EU's **Carbon Border Adjustment Mechanism** (CBAM) is our **landmark tool to put a fair price on the carbon emitted during the production of carbon intensive goods** that are entering the EU, and to encourage cleaner industrial production in non-EU countries.

Q96. C

- The government has brought "Over the Top" (OTT) platforms or video streaming service providers under the ambit of Ministry of Information and Broadcasting.
- An "over-the-top" media service is any **online content provider that offers streaming media as a standalone product**. The term is commonly applied to **video-on-demand platforms**, **but also refers to audio streaming, messaging services, or internet-based voice calling solutions**. Hence **statements 1, 2 and 3 are correct**.

- Services circumvent traditional media distribution channels such as telecommunication or cable television providers.
- So far in India, **there are no laws or rules regulating OTT platforms** as it is a relatively new medium of entertainment. Unlike television, print or radios, which follow guidelines released by governments, OTT platforms, classified as digital media or social media, had little to no regulation on the choice of content they offered, the subscription rates, certification for adult movies and others.
- Earlier the **Internet and Mobile Association of India** (IAMAI), a representative body of the OTT platforms and **Online Curated Content Providers** or OCCPs had proposed a self-regulatory model.
- However, those were shot down by the Ministry of Information and Broadcasting.
- The government's move to bring the OTT platforms under the I&B Ministry could also mean that in future these platforms would have to apply for certification and approval of the content they wish to stream.

Q97. C

- Recently a newly constituted Panda committee under the Tribal Affairs Ministry is to look into the
 issue of forest rights of the Mankidia tribe in Simlipal Tiger Reserve. Mankidiya is one of the 13
 Particularly Vulnerable Tribal Groups (PVTG) in Odisha. They critically depend on making rope with
 siali fibre that is richly available in Similipal Tiger Reserve (STR). They were denied habitat rights inside
 STR under Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights)
 Act 2006. Hence pair 1 is correctly matched.
- The Jharkhand government has passed a resolution to send the centre a letter to recognize Sarna religion and include it as a separate code in the census of 2021. The followers of Sarna faith believe in praying to nature. The motto of the faith is "Jal, Jungle, Zameen". Hence pair 2 is correctly matched.
- The Uttar Pradesh government has recently embarked upon a scheme to take the unique culture of its
 ethnic Tharu tribe across the world. Most of them are forest dwellers and some practiced
 agriculture. They live mostly in Uttar Pradesh, Uttarakhand, and Bihar. They are the followers of
 Theravada Buddhism. Hence pair 3 is correctly matched.

Q98. A

Sulphur dioxide cools the planet Earth in the way that the presence of sulphur dioxide in the atmosphere is converted into sulphate aerosols. These aerosols reflect solar radiation back into space. In addition to this, this conversion and interaction with other substances leads to creation of clouds that have a higher number of water droplets that stick around the aerosols, consisting of sulphate ions. The smaller droplets allow more scattering of light in many directions and make the cloud brighter, denser, and thicker. However, natural sulphur dioxide emissions have a better and bigger impact because they reach up to the level of the stratosphere, while anthropogenic emissions generally exhibit their presence in the troposphere layer, where pollutants are short-lived, with a lifespan of two weeks.

Q99. Answer- b

Explanation:

Karst region, a name derived from the Karst district of Yugoslavia. Karst is a type of landscape where the dissolving of the bedrock has created sinkholes, sinking streams, caves, springs, and other characteristic features. Karst is associated with soluble rock types such as limestone, marble, and gypsum.

Statement 1 is correct: On the surface of the limestone of Karst topography are **numerous swallow holes**, which are small depressions carved out by solution where rain-water sinks into the limestone at a point of weakness. They are also known as **sinkholes**.

Statement 2 is not correct: Stalactites are the sharp, slender, **downward growing pinnacles** hanging from the roof of caves. The water carries calcium in solution and when this lime-charged water evaporates, it leaves behind the solidified crystalline

calcium carbonate forming stalactites. **A stalagmite is an upward-growing** mound of mineral deposits that have precipitated from water dripping onto the floor of a cave. Most stalagmites have rounded or flattened tips.

Statement 3 is correct: Karst regions have a bleak landscape, occasionally broken by precipitous slopes. **There is a general absence of surface drainage** as most of the surface water has gone underground. Streams rising on other rocks only flow over limestone for a short distance and then disappear underground. For the greater part of their course, they cut their way along the joints and fissures of the rock, wearing out a system of underground channels. The surface valleys are therefore dry.

Q100. C

Explanation:

As per Article 14 the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.

As per Article 15 the State shall not discriminate against any citizen only on the ground of religion, race, caste, sex or place of birth.

According to Article 16 Equality of opportunity for all citizens in matters of public employment.

There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State,

No citizen shall, on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them, be ineligible for, or discriminated against in respect of, any employment or office under the State. **Article 29 stipulates** that any section of the citizens shall have the right to conserve its distinct language, script or culture.

