

All India Open Mock Test-1 Solution

1. Ans A

Expl:

- **Statement I: The Battle of Panipat marked the beginning of the Mughal Empire in India.**

- The First Battle of Panipat took place on April 21, 1526, and is considered a significant event in Indian history as it marked the beginning of the Mughal Empire in India.
- The Mughal Empire went on to become one of the largest and most influential empires in Indian history, lasting for over 300 years and leaving a lasting impact on Indian culture, architecture, and society.

- **Statement II: Babur, the founder of the Mughal Empire, defeated Ibrahim Lodi in the Battle of Panipat.**

- Babur was a descendant of Timur on his father's side and Genghis Khan on his mother's side. He inherited the region of Fergana in present-day Uzbekistan and was an ambitious ruler who sought to expand his territories.
- Ibrahim Lodi was the Sultan of Delhi and the last ruler of the Lodi dynasty. He faced internal dissent and challenges to his rule, which weakened his position.
- The Battle of Panipat was the culmination of Babur's ambition to establish his rule in India and Ibrahim Lodi's attempt to defend his kingdom. Babur's army, though smaller in number, was better equipped with artillery and firearms, a technology that was relatively new to the Indian subcontinent at the time.
- Babur's innovative tactics, such as the use of the "tulughma" maneuver (a form of flanking attack) and the effective deployment of his cannons, played a crucial role in his victory. This battle is often cited as one of the earliest examples of the successful use of gunpowder warfare in India.

- **Connection between the Statements:** The victory of Babur over Ibrahim Lodi in the

Battle of Panipat directly led to the establishment of the Mughal Empire in India. Babur's success in this battle allowed him to capture Delhi and Agra, laying the foundation for the expansive Mughal Empire that would dominate much of the Indian subcontinent for centuries.

2. Ans: C

Exp:

- **Statement 1 is incorrect:** The maximum strength of a state legislative assembly (Vidhan Sabha) is fixed at 500 members, but the minimum strength is fixed at 60 members, except for the states of Goa, Sikkim, Mizoram, and the Union Territory of Puducherry, where the minimum number can be less than 60. **Therefore, statement a) is incorrect.**

- **Statement 2 is incorrect:** The strength of the legislative council (Vidhan Parishad) is fixed at a minimum of 40 members. However, the maximum strength is not fixed at one-third of the legislative assembly but at one-third of the total strength of the assembly or 40, whichever is greater, subject to a maximum of 108 members. **Therefore, statement b) is incorrect.**

- **Statement 3 is correct:** The legislative council can delay a bill for a maximum of four months. It can delay the bill for the first three months during the first consideration and for one more month during the second consideration. This provision allows the legislative council to thoroughly review and deliberate on proposed legislation before it becomes law, ensuring comprehensive scrutiny.

- **Statement 4 is correct:** A person to be elected to the legislative council must be an elector for an assembly constituency in the concerned state. This requirement ensures that members of the legislative council have

a direct connection to the electorate and are accountable to the people they represent.

3. **Ans: A**

Exp:

- **Money Bill:** Money Bills can only be introduced in the Lok Sabha and require a simple majority to pass. They primarily deal with matters like taxation, public expenditure, etc. According to Article 110 of the Indian Constitution, a Money Bill is one that contains provisions exclusively on matters such as the imposition, abolition, remission, alteration, or regulation of any tax; the regulation of the borrowing of money by the Government of India; the custody of the Consolidated Fund of India or the Contingency Fund of India, and a few other specified matters.
- **Finance Bill:** Finance Bills are similar to Money Bills but can contain other provisions as well. They are primarily concerned with financial matters but do not fit the strict definition of a Money Bill. Finance Bills are categorized into two types: Finance Bill Category I, which is essentially treated like a Money Bill but may contain other provisions as well, and Finance Bill Category II, which contains provisions related to expenditure and does not require the same approval process as a Money Bill.
- **Ordinary Bill:** Ordinary Bills can deal with any subject (excluding financial matters reserved for Money Bills) and can be introduced in either house of Parliament. They do not specifically relate to the annual financial statement or appropriation of moneys. Ordinary Bills require a simple majority for passage and go through a more standard legislative process compared to Money Bills.
- **Constitutional Amendment Bill:** Constitutional Amendment Bills can be introduced in either house of Parliament and require a special majority for passage, not just a simple majority. **According to Article**

368 of the Indian Constitution, a Constitutional Amendment Bill must be passed by a majority of the total membership of each House of Parliament and by a majority of not less than two-thirds of the members of that House present and voting. Certain amendments also require ratification by at least half of the State Legislatures.

4. **Ans: A**

Exp:

- **Statement 1 is correct.** The Constitution of India, as adopted on November 26, 1949, indeed contained a Preamble, 395 Articles, and 12 Schedules. These components laid the foundation for the governance and legal framework of the newly independent nation.
- **Statement 2 is correct.** Certain provisions related to citizenship, elections, and the provisional parliament were indeed given immediate effect on November 26, 1949. This was done to ensure a smooth transition to self-governance and to establish the necessary legal and administrative structures.
- **Statement 3 is incorrect.** While the major part of the Constitution came into force on January 26, 1950, this date is celebrated as Republic Day, marking the transition of India to a fully sovereign republic. The date of enactment refers to November 26, 1949, when the Constituent Assembly adopted the Constitution, whereas January 26, 1950, is the date when the Constitution came into full effect.

5. **Ans: C**

Exp:

- The International Court of Justice (ICJ), often referred to as the World Court, is the principal judicial organ of the United Nations (UN). It was established in 1945 and has its seat at the Peace Palace in The Hague, Netherlands. The ICJ's role is to settle legal disputes between states and to provide advisory opinions on legal questions referred

to it by authorized UN organs and specialized agencies.

- **Statement 1 is correct.** The International Court of Justice (ICJ) is composed of fifteen judges who are elected for nine-year terms by the United Nations General Assembly and the Security Council. The judges are elected based on their qualifications and not their nationality, although no two judges can be from the same country at the same time.
- **Statement 2 is correct.** The ICJ is indeed composed of judges, not representatives of governments. The judges act in their personal capacity and are independent of their governments. Their role is to apply international law impartially and without any influence from their home countries.
- **Statement 3 is incorrect.** As of the time of writing, only three Indians have been members of the ICJ: Sir Benegal Rau, Nagendra Singh, and Dalveer Bhandari. Sir Benegal Rau was one of the original judges when the court was established in 1946. Nagendra Singh served as a judge from 1973 to 1988, including a term as President of the ICJ from 1985 to 1988. Dalveer Bhandari has been a judge at the ICJ since 2012 and was re-elected for a second term in 2017.

6. Ans: C

Exp:

- The United Nations Convention on the High Seas, adopted in 1958, is an international treaty that governs the use of the high seas, which are defined as "**all parts of the sea that are not included in the territorial sea or in the internal waters of a State.**" The treaty aims to codify and develop principles of international law relating to the high seas, ensuring that they are used for peaceful purposes and for the benefit of all mankind.
- **Key provisions of the treaty include:**
 - **Freedom of navigation:** All states have the right to sail ships on the high seas, including the freedom of navigation,

overflight, and the laying of submarine cables and pipelines.

- **Freedom of fishing:** All states have the freedom to fish on the high seas, subject to their obligations under international law and the rights of coastal states in their exclusive economic zones.
 - **Protection of the marine environment:** States are required to take measures to prevent pollution of the marine environment and to conserve its resources.
 - **Jurisdiction:** No state may validly purport to subject any part of the high seas to its sovereignty. However, states have the duty to cooperate in the conservation and management of living resources on the high seas.
- The Convention also establishes a framework for the settlement of disputes arising from its interpretation or application and provides for the possibility of amendments and revisions.
 - **Statement 1 is correct.** The UN Treaty on the High Seas aims to protect and sustainably use marine biodiversity in areas beyond national jurisdiction.
 - **Statement 2 is incorrect.** As of now, the treaty has not been formally adopted by UN members and is still under negotiation.
 - **Statement 3 is correct.** The treaty aims to ensure that marine genetic resources in areas beyond national jurisdiction are shared fairly and equitably, preventing any single state from claiming exclusive rights over them.

7. Ans: D

Exp:

- **Statement I: The post-Mauryan age between 200 BCE and 200 CE is referred to as the dark age of India.**
 - This statement is false. The post-Mauryan age (200 BCE to 200 CE) is not generally referred to as the dark age of India. Instead, this period is known for its cultural diversity, political fragmentation, and the rise

of regional powers. It was a time of significant change, with the emergence of new dynasties such as the Shungas, Kanvas, Satavahanas, and the spread of new religions and cultural practices.

- **Statement II: Trade and commerce were affected, resulting in almost no economic progress.**

- This statement is true, but it does not apply to the entire post-Mauryan period. While there might have been phases of economic slowdown or regional disruptions, the period as a whole saw considerable trade and commerce, especially with the Roman Empire. The period was marked by an increase in trade, both within the Indian subcontinent and with other parts of the world, such as Central Asia, Southeast Asia, and the Roman Empire. This trade led to economic prosperity in many regions, particularly in the Deccan and along the western coast.

- **Connection between the Statements:** Since Statement I is false, Statement II cannot be the correct explanation for it. Although there were economic challenges in some regions and during certain phases, the post-Mauryan period was not a dark age, and there was significant economic progress in many areas, particularly due to trade.

8. **Ans: B**

Exp:

- The Rahnumai Mazdayasnan Sabha is a religious and social organization of Zoroastrians (Parsi and Irani communities) based in Mumbai, India. It was founded in **1851** with the aim of promoting the religious and social welfare of the Zoroastrian community.
- **The Sabha is involved in various activities, including:**
 - Providing religious education and guidance to the community members.

- Organizing religious ceremonies, prayers, and festivals.
- Undertaking charitable and philanthropic activities for the welfare of the community.
- Preserving and promoting Zoroastrian culture, traditions, and heritage.
- Representing the interests of the Zoroastrian community in matters concerning their religious rights and freedoms.

- The Rahnumai Mazdayasnan Sabha plays a significant role in the lives of Zoroastrians in Mumbai and has been instrumental in fostering a sense of unity and identity among the community members.

- **Statement 1 is incorrect.** The Rahnumai Mazdayasnan Sabha was not directly associated with the Indian National Congress, though some of its founders were prominent members of the Congress.

- **Statement 2 is correct.** The Association was indeed founded by Narouji Furdonji, Dadabhai Naoroji, and S.S. Bengalee.

- **Statement 3 is correct.** The primary purpose of the Association was to advocate for religious and social reforms within the Parsi community.

9. **Ans: C**

Exp:

- The Attorney General of India is the highest-ranking legal officer of the central government (C).
- The Advocate General is the chief legal advisor to a state government (A).
- The Solicitor General of India is the second highest-ranking legal officer of the central government (B).

10. **Ans: B**

Exp:

- The Delimitation Commission is a high-power body in India responsible for redrawing the boundaries of parliamentary and assembly

constituencies based on the latest census data.

- Its main objective is to ensure fair and equal representation by adjusting the number of seats allocated to different states in the Lok Sabha and state legislative assemblies. The commission's orders are final and cannot be challenged in court. Its work is crucial for maintaining the democratic principle of equal representation in the electoral process.
- **Statement 1 is incorrect.** The Delimitation Commission is not appointed after every five years. It is constituted as and when required, usually after a Census.
- **Statement 2 is correct.** The orders of the Delimitation Commission are final and cannot be challenged in any court.
- **Statement 3 is correct.** The primary aim of the Delimitation Commission is to ensure equitable representation by adjusting the number and boundaries of constituencies based on the latest population data.

11. Ans: B

Exp:

- Private member's bills are bills introduced in the Indian Parliament by members who are not part of the government. These members are known as private members, and the bills they introduce are called private member's bills. Private member's bills are an important part of the legislative process as they allow individual members of Parliament to introduce legislation on matters of their choice, even if they are not part of the ruling party or the government.

Key points about private member's bills include:

- **Introduction:** Private member's bills are introduced on Fridays in Parliament when government business is not scheduled. Each private member is allowed to introduce a limited number of bills during a session.
- **Discussion and Voting:** Private member's bills go through the same process of

discussion and voting as government bills. They are debated in the same way as other bills and are voted on by members of Parliament.

- **Priority:** Private member's bills are generally given less priority than government bills. Due to time constraints, not all private member's bills are discussed or voted on. Bills that are not taken up lapse at the end of the session.
- **Importance:** Private member's bills allow members of Parliament to raise important issues and propose legislation that may not be part of the government's agenda. They provide an opportunity for individual members to contribute to the legislative process.
- **Success Rate:** Private member's bills have a relatively low success rate in India. Since 1952, only a few private member's bills have been passed by Parliament. However, even if a bill is not passed, it can draw attention to important issues and stimulate debate.

- **Statement 1 is correct.** Private member's Bills can be introduced and discussed only on Fridays.
- **Statement 2 is incorrect.** Their introduction in the House requires seven days' notice, not 15 days.
- **Statement 3 is incorrect.** Private members can bring constitutional amendment bills, but they cannot bring money bills.

12. Ans: B

Exp:

- **Statement I: Minamata Convention has set mercury limits in skin-lightening products.**
 - This statement is true. The Minamata Convention on Mercury is an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. One of the

provisions of the convention is to set limits on the amount of mercury allowed in skin-lightening products, as mercury is a common ingredient in such products.

- **Statement II: Mercury inhibits the body's production of melanin.**
 - This statement is also true. Mercury compounds are used in skin-lightening products because they can inhibit the formation of melanin, which is responsible for skin pigmentation. By doing so, these products can lighten the skin tone. However, mercury is toxic and can have severe health effects, which is why its use in cosmetics is regulated.
- **Connection between the Statements:** Although both statements are true, Statement II is not the correct explanation for Statement I. The Minamata Convention sets mercury limits in skin-lightening products primarily due to the overall toxicological concerns associated with mercury exposure, including neurological and kidney damage, rather than specifically because mercury inhibits melanin production.

13. Ans: B

Exp:

- The '6+2+1' group refers to a regional consultative mechanism that includes six neighboring countries of Afghanistan (China, Iran, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan), plus Russia and the United States, and Afghanistan itself. It aims to address the critical challenges and support stability in Afghanistan.

14. Ans: D

Exp:

- The FAME-India (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) scheme is a part of the National Electric Mobility Mission Plan. It was launched by the Government of India to

promote the adoption of electric and hybrid vehicles in the country.

- **Key points of the FAME-India scheme:**
 - **Objectives:** The scheme aims to reduce dependency on fossil fuels, decrease emissions, and promote the manufacturing of electric and hybrid vehicle technology.
 - **Phases: FAME-India is implemented in two phases:**
 - **Phase I (2015-2019):** Focused on creating demand for electric vehicles (EVs) by providing subsidies to buyers, setting up charging infrastructure, and promoting awareness.
 - **Phase II (2019-2022):** Aims to further support the electrification of public and shared transportation, establish charging infrastructure, and continue subsidies for EV buyers.
 - **Incentives:** The scheme offers incentives for the purchase of electric vehicles, including two-wheelers, three-wheelers, four-wheelers, and buses. The subsidy amount varies based on the type of vehicle and its battery capacity.
 - **Eligibility:** Manufacturers of electric and hybrid vehicles who meet specified technical criteria are eligible to participate in the scheme.
- **Statements 1 and 2 are correct.** The FAME-India (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) Scheme is indeed aimed at promoting eco-friendly vehicles and is part of the National Electric Mobility Mission Plan.
- **Statement 3 is incorrect.** The FAME-India Scheme was launched by the Department of Heavy Industry, not the Ministry of New and Renewable Energy.

15. Ans: D

Exp:

- **All three statements are correct:** SVAMITVA (Survey of Villages and Mapping with Improved Technology in Village Areas) is a

flagship program of the Indian government launched in 2020.

- **Focus:** Its key goal is to map rural properties with the latest survey methods like drone technology.
- The scheme is implemented by the **Ministry of Panchayati Raj** in collaboration with the Survey of India and the State Panchayati Raj Departments.
- **Objectives:**
 - **Clear Land Ownership:** Provide rural residents with official documentation of their property ownership ("Property Cards").
 - **Financial Stability:** Empower villagers to use their property as a financial asset to obtain loans and other benefits.
 - **Accurate Records:** Create a precise database of land ownership for better development planning at the village level.
 - **Taxation:** Ensure more effective property tax collection for local governments (Gram Panchayats).
 - **Dispute Reduction:** Minimize legal conflicts and property-related disputes.

16. Ans: A

Exp:

- **PM-SVANidhi Portal:** This portal is associated with the Ministry of Housing and Urban Affairs. It is part of the Pradhan Mantri Street Vendor AtmaNirbhar Nidhi (PM SVANidhi) scheme, which aims to provide affordable working capital loans to street vendors to resume their livelihoods that have been adversely affected due to the COVID-19 pandemic.
- **Shagun Portal:** This portal is associated with the Ministry of Education. The Shagun portal is an initiative to monitor the activities under the Samagra Shiksha Abhiyan, which is the Government of India's flagship program for the achievement of universalization of elementary education.

- **Portal PENCIL:** This portal is associated with the Ministry of Labour and Employment. PENCIL stands for Platform for Effective Enforcement for No Child Labour. It is an online platform that aims to combat child labor by promoting enforcement of legal provisions and facilitating coordination between different enforcement agencies.

17. Ans: C

Exp:

- **Statement 1 is correct:** Electoral Bonds were introduced in India in 2018 as a measure to promote transparency in political funding. They are financial instruments that can be purchased from specified branches of State Bank of India (SBI) and used to make donations to political parties.
- **Statement 2 is correct:** Only individuals or entities incorporated in India can purchase Electoral Bonds. This restriction is aimed at ensuring that only legitimate entities with a stake in the country's affairs can contribute to political parties through this mechanism.
- **Statement 3 is correct:** Electoral Bonds are issued in specific denominations, including Rs. 1000, Rs. 10,000, Rs. 1 lakh, Rs. 10 lakh, and Rs. 1 crore. These denominations allow for both small and large contributions to political parties, thereby broadening the base of political funding.

18. Ans: C

Exp:

- The Election Commission of India (ECI) is a **constitutional body** that is responsible for conducting and regulating elections in India. It was established in 1950 and is headquartered in New Delhi. The ECI is an autonomous body that is independent of the government. **The ECI is responsible for a number of important tasks, including:**
 - Preparing electoral rolls
 - Delimiting constituencies
 - Issuing notifications for elections
 - Conducting polls

- Counting votes
- Declaring results
- Settling election disputes
- The ECI is also responsible for enforcing the **Model Code of Conduct**, which is a set of guidelines for political parties and candidates to follow during elections. The Model Code of Conduct is designed to ensure that elections are conducted in a free and fair manner.
- **Statement 1 is correct.** The ECI is a constitutional body established under Article 324 of the Indian Constitution.
- **Statement 2 is incorrect.** The CEC and other Election Commissioners have a term of six years, but their tenure ends at the age of 65, not earlier.
- **Statement 3 is correct.** The ECI is responsible for conducting elections to the offices of the President and Vice-President of India, as well as to the Lok Sabha, Rajya Sabha, and State Legislative Assemblies.

19. Ans: A

Exp:

- **T.N. Seshan (A)** is known for introducing several electoral reforms and initiatives to ensure free and fair elections (1).
- **S.Y. Quraishi (B)** initiated various measures to enhance voter education and awareness (2).
- **O.P. Rawat (C)** played a key role in introducing the Voter Verified Paper Audit Trail (VVPAT) system (3).

20. Ans: B

Exp:

- **Assertion (A) is true.** Under Article 257(1) of the Constitution, the Centre can give directions to a State regarding the construction and maintenance of means of communication that are declared to be of national or military importance.
- **Reason (R) is true.** The Constitution does provide for a strong Centre to ensure uniformity in governance and coordination among the States. However, this is not the

direct reason for the Centre's authority to give directions in the context of means of communication. The reason for this authority is more specifically related to national and military interests.

21. Ans B

Exp:

- **Statement I:** The rejection of Johnson & Johnson's patent application for a formulation salt of the TB drug Bedaquiline by the Indian Patent Office indicates that Johnson & Johnson does not have a patent for Bedaquiline in India.
 - This statement is true. The rejection of the patent application for a formulation salt of Bedaquiline by the Indian Patent Office means that Johnson & Johnson was not granted a patent for that specific formulation in India. However, it does not necessarily imply that Johnson & Johnson does not have any patent for Bedaquiline in India at all. They might have patents for other aspects or formulations of the drug.
- **Statement II: Section 3(d) of the Patents Act states that salt forms and derivatives of known substances are not patentable.**
 - This statement is true. Section 3(d) of the Indian Patents Act is a clause that restricts the patenting of new forms of known substances unless they show significantly enhanced efficacy. This provision is aimed at preventing the practice of "evergreening," where pharmaceutical companies make minor modifications to existing drugs to extend their patent life.
- **Connection between the Statements:** While both statements are true, Statement II is not the correct explanation for Statement I. The rejection of the patent application for the formulation salt of Bedaquiline might be due to various reasons, including those related to Section 3(d), but the statement does not explicitly establish that connection. Furthermore, Statement I pertains to a

specific patent application, while Statement II describes a general provision of the Indian Patents Act.

22. Ans: A

Exp:

- The Kimberley plateau and the Murray river are located in Australia.
- The Vistula river is in Poland, and Hudson Bay is in Canada.

Trick to remember: Think of the Kimberley Plateau and the Murray River as key features of the Australian landscape, while the Vistula River and Hudson Bay are linked to Europe and North America, respectively.

23. Ans: B

Exp:

- **Statement 1 is correct:** Dhammamahatras were officials in ancient India who were responsible for the administration of justice and overseeing the welfare of the people. They played a crucial role in maintaining law and order and ensuring that the principles of dharma (righteousness) were upheld in society.
- **Statement 2 is incorrect:** Rajukas were officials in ancient India who were primarily responsible for land measurement and land revenue. They played a key role in the economic administration of the state by ensuring that land was accurately measured and revenue was collected efficiently.
- **Statement 3 is incorrect:** Shulkadhyakshas were officials in ancient India who were responsible for collecting tolls and customs duties. They played a crucial role in the economic administration of the state by ensuring that revenue from trade and commerce was collected effectively.

24. Ans: A

Exp:

- **Assertion (A) is true.** Qutb Shahi Architecture, prevalent in the region around

Hyderabad, is known for its extensive use of grey granite.

- **Reason (R) is also true.** The abundant availability of grey granite in the Deccan region significantly influenced the choice of materials in Qutb Shahi Architecture. This availability made it a practical and economical choice for construction.

Aspect	Details
Origins & Influences	<ul style="list-style-type: none"> • Dynasty: Developed under the Qutb Shahi dynasty (1518-1687), also known as the Golconda Sultanate. This Shia Muslim dynasty ruled the region around Hyderabad, India. • Indo-Islamic Style: A unique blend of Persian, Indian, and Hindu architectural elements. • Persian Influences: Domes, arches, minarets, and the use of glazed tiles. Local Influences: Hindu-inspired motifs, ornamentation techniques, corbelled brackets, and the use of locally sourced granite.
Famous Structures	<ul style="list-style-type: none"> • Golconda Fort: A massive fortified complex showcasing the grandeur and military might of the dynasty. • Qutb Shahi Tombs: A stunning necropolis housing the tombs of the Qutb Shahi rulers, known for their intricate carvings and grand scale. • Charminar: The iconic symbol of Hyderabad, built with four minarets and a mosque within.

	<ul style="list-style-type: none"> • Mecca Masjid: One of the largest mosques in India, built by the Qutb Shahis. • Taramati Baradari: A restored caravanserai (travelers' inn) famed for its acoustics and views.
Characteristics of Qutb Shahi Architecture	<ul style="list-style-type: none"> • Scale and Symmetry: Emphasis on grand structures and balanced design. • Domes and Arches: Prominent features borrowed from Persian architecture. • Ornamentation: Intricate carvings, floral motifs, and use of colorful tiles. • Materials: Extensive use of granite along with lime mortar, a notable building innovation. • Water Features: Fountains, pools, and water channels were incorporated for cooling and aesthetics.

25. Ans: B

Exp:

- Takht-i-Bahi, Guldara, and Sirkap are archaeological sites located in the northwestern region of the Indian subcontinent (present-day Pakistan). These sites are known for their Buddhist monastic complexes, which include stupas, monasteries, and other religious structures.
- **Takht-i-Bahi:** Takht-i-Bahi is an archaeological site located in Mardan District, Khyber Pakhtunkhwa, Pakistan. It is a well-preserved Buddhist monastery complex dating back to the 1st century BCE. Takht-i-Bahi is renowned for its architecture, which includes stupas, monastic cells, courtyards, and a main meditation hall. It is considered one of the most impressive Buddhist sites in Pakistan and has been designated as a UNESCO World Heritage Site.

- **Guldara:** Guldara is another archaeological site in the Mardan District of Khyber Pakhtunkhwa, Pakistan. It is known for its Buddhist remains, including stupas and monastic cells. Guldara is believed to have been an important center of Buddhism in ancient times, reflecting the region's rich Buddhist heritage.
- **Sirkap:** Sirkap is an ancient city located near Taxila in Punjab, Pakistan. It was founded by the Greco-Bactrian king Demetrius around 180 BCE. Sirkap is known for its well-planned layout, with streets laid out in a grid pattern and houses built using stone and mud bricks. The city was an important center of trade and culture and is known for its Hellenistic architectural style, reflecting the influence of Greek and Buddhist architectural traditions.

26. Ans: A

Exp:

- **Subansiri:** The Subansiri River is known for its potential for hydropower generation. It is a major tributary of the Brahmaputra River, originating in the Tibet Autonomous Region of China and flowing through the Indian states of Arunachal Pradesh and Assam. The Subansiri Hydroelectric Project, located on the river, is one of the largest hydroelectric projects in India and has the potential to generate significant electricity.
- **Manas:** The Manas River is a major left-bank tributary of the Brahmaputra River. It is known for its importance in biodiversity conservation. The Manas Wildlife Sanctuary, located along the river in the state of Assam, is a UNESCO World Heritage Site and is home to a wide variety of wildlife, including the endangered Indian rhinoceros, Bengal tiger, and Asian elephant. The river and its surrounding areas are vital for the conservation of these species and their habitats.
- **Lohit:** The Lohit River originates in the Eastern Himalayas and is known for its high sediment load. It is a major tributary of the

Brahmaputra River, flowing through the Indian states of Arunachal Pradesh and Assam. The river carries a large amount of sediment due to the erosion of the Himalayan mountains, which contributes to the fertility of the plains in the Brahmaputra Valley.

- **Dibang:** The Dibang River is considered sacred in the Mishmi culture. It is a tributary of the Brahmaputra River, flowing through the northeastern Indian state of Arunachal Pradesh. The river is revered by the Mishmi people, who consider it a source of life and prosperity. The Dibang Valley, through which the river flows, is known for its rich biodiversity and unique cultural heritage.

Trick: "Some Ducks Love Muddy Waters"

- **Subansiri (Some):** Known for its potential for **hydropower generation**. Think of "Subansiri" as a "Substation" generating power.
- **Dibang (Ducks):** A major **left-bank tributary** important for **biodiversity conservation**. Imagine "Dibang" as a "Diverse" habitat for ducks.
- **Lohit (Love):** Originates in the **Eastern Himalayas** and is known for its **high sediment load**. Picture "Lohit" as "Loaded" with sediments from the "Himalayas."
- **Manas (Muddy):** A **right-bank tributary** considered **sacred in the Mishmi culture**. Visualize "Manas" as a "Mystical" river flowing through "Muddy" banks.

27. Ans: C

Exp:

- **Statement 1 is correct.** The Malabar Tree Toad (*Pedostibes tuberculosus*) is indeed endemic to the Western Ghats, a biodiversity hotspot in India. This region is known for its rich flora and fauna, and the Malabar Tree Toad is one of the unique amphibian species found here. Its habitat includes evergreen and semi-evergreen forests, where it lives primarily on trees. The toad's distribution is limited to this specific geographical area,

making its conservation crucial for maintaining the ecological balance of the Western Ghats.

- **Statement 2 is incorrect.** The species is listed as 'Endangered' on the IUCN Red List, not 'Critically Endangered.' The 'Endangered' status indicates that the Malabar Tree Toad is at a high risk of extinction in the wild due to factors such as habitat loss, deforestation, and human encroachment. Conservation efforts are needed to protect its habitat and prevent further decline in its population.
- **Statement 3 is correct.** The Malabar Tree Toad is known for its distinctive breeding behavior, which occurs during the monsoon season. This period of increased rainfall provides the ideal conditions for breeding, as the toads require water-filled cavities such as tree holes for laying their eggs. The monsoon season also triggers an increase in insect activity, providing ample food for the toads. The males call to attract females, and their breeding calls are often heard during this time. The eggs are laid in water-filled cavities, and the tadpoles develop in these aquatic environments until they metamorphose into adult toads. This seasonal breeding behavior is crucial for the survival and reproduction of the species.

28. Ans: A

Exp:

- **Bluetooth: Bluetooth technology allows devices to exchange data over short distances using radio waves.** It is commonly used for connecting devices such as smartphones, headphones, speakers, and keyboards without the need for cables. Bluetooth operates in the 2.4 GHz frequency band and can connect devices up to a range of approximately 10 meters (33 feet), although this can vary depending on the environment and the specific devices. It is a low-power technology, making it suitable for battery-powered devices.

- **Wi-Fi:** Wi-Fi is a wireless networking technology that provides high-speed internet access by connecting devices to a wireless local area network (WLAN). It uses radio waves to transmit data between devices and a wireless router or access point. Wi-Fi networks are commonly used in homes, offices, and public places to provide internet connectivity to laptops, smartphones, tablets, and other wireless devices. Wi-Fi standards, such as 802.11ac and 802.11ax (Wi-Fi 6), support varying speeds and frequencies to accommodate different networking needs.
- **NFC:** Near Field Communication (NFC) is a short-range wireless technology that enables two devices to communicate when they are within a few centimeters of each other. It is often used for contactless

payments, access control, and data sharing between devices. NFC operates at a frequency of 13.56 MHz and can be used for secure transactions, as the close proximity required for communication reduces the risk of eavesdropping.

- **LTE: Long-Term Evolution (LTE) is a standard for high-speed wireless communication for mobile devices and data terminals.** It is a technology used by cellular networks to provide fast data transfer rates and improved network capacity. LTE is often referred to as 4G LTE and offers higher speeds and lower latency compared to previous generations of mobile network technologies, such as 3G. It supports various bandwidths and is designed to accommodate a wide range of mobile and fixed devices.

Feature	Bluetooth	LTE (Long-Term Evolution)	Wi-Fi	NFC (Near Field Communication)
Primary Use	Short-range wireless communication	High-speed cellular data communication	Wireless networking and internet access	Short-range communication for payments and data exchange
Range	Up to 100 meters (class 1)	Several kilometers	Up to 100 meters	Up to 10 cm
Speed	Up to 3 Mbps (Bluetooth 3.0)	Up to 1 Gbps (LTE Advanced)	Up to 9.6 Gbps (Wi-Fi 6)	Up to 424 kbps
Frequency	2.4 GHz	Multiple bands (700 MHz to 2600 MHz)	2.4 GHz and 5 GHz	13.56 MHz
Connectivity	Point-to-point or multipoint	Cellular network	Wireless LAN	Point-to-point
Use Cases	Wireless peripherals, audio devices, data transfer	Mobile internet, voice calls, SMS, video streaming	Internet access, home networking, public hotspots	Contactless payments, access control, data exchange
Power Consumption	Low	High	Moderate	Very low
Security	Encryption and authentication	Strong encryption and authentication	Encryption and authentication	Encryption and authentication

29. Ans: C

Exp:

- **Statement 1 is correct.** MIMO (Multiple Input Multiple Output) technology is a key

advancement in wireless communication that enhances system capacity and reliability. By using multiple antennas at both the transmitter and receiver ends, MIMO can

transmit multiple data streams simultaneously over the same radio channel. This spatial multiplexing increases the data throughput without requiring additional bandwidth or transmit power. MIMO technology also improves signal quality and reduces error rates through techniques like spatial diversity and beamforming.

- **Statement 2 is incorrect.** MIMO technology indeed uses multiple antennas for both transmission and reception, which is a fundamental characteristic that distinguishes it from traditional single-antenna (SISO) systems. The use of multiple antennas allows MIMO systems to exploit spatial dimensions, leading to significant improvements in data rates and link reliability. The statement that MIMO uses a single antenna is a misunderstanding of the technology.
- **Statement 3 is correct.** MIMO technology is a cornerstone of modern wireless communication standards, including LTE (Long-Term Evolution) and 5G. In LTE, MIMO is used to increase network capacity and data rates, enabling faster and more efficient mobile broadband services. In 5G, MIMO plays an even more critical role, with advanced implementations like massive MIMO providing the foundation for ultra-high-speed data transmission and enhanced network performance. MIMO's ability to increase data rates and improve link reliability is essential for meeting the demands of next-generation wireless networks.

30. Ans: B

Exp:

- **Statement 1 is correct.** The Government Procurement Agreement (GPA) aims to ensure transparency, fairness, and non-discrimination in government procurement practices among its signatories. By adhering to these principles, the GPA promotes an open and competitive environment for

government procurement, which can lead to better quality and value for public spending.

- **Statement 2 is incorrect.** The GPA is a plurilateral agreement within the World Trade Organization (WTO) framework, meaning that it is not mandatory for all WTO member countries to be signatories. Only those members that have chosen to accede to the GPA are bound by its rules and commitments. This allows countries the flexibility to decide whether they wish to be part of the agreement based on their own procurement policies and practices.
- **Statement 3 is correct.** The GPA covers procurement by central government entities, sub-central government entities (such as state, regional, or local authorities), and public sector enterprises. The agreement aims to open up government procurement markets to international competition, which can lead to more efficient and cost-effective procurement outcomes. By including a wide range of entities, the GPA ensures that the benefits of open procurement are realized at multiple levels of government.

31. Ans: C

Exp:

- **Statement 1 is correct.** The Indian Independence Act of 1947 indeed abolished the suzerainty of the British Crown over the Indian princely states. This move allowed the princely states to make their own decisions regarding their future allegiance, whether to join India, Pakistan, or remain independent. This was a significant step towards the dismantling of British colonial rule in the Indian subcontinent.
- **Statement 2 is correct.** The Act provided for the division of British India into two independent dominions, India and Pakistan. This partition was based on religious lines, with Pakistan intended to be a Muslim-majority nation and India a Hindu-majority nation. The provision for these new dominions to withdraw from the British

Commonwealth if they wished provided them with full sovereignty and the ability to conduct their own foreign affairs

- **Statement 3 is correct.** The Act mandated the appointment of a Boundary Commission, headed by Sir Cyril Radcliffe, to determine the boundaries between India and Pakistan. The commission was tasked with drawing the borders in a way that would divide the provinces of Bengal and Punjab between the two new nations. The Radcliffe Line, as it came to be known, resulted in significant population movements and communal violence, as people found themselves on the "wrong" side of the border based on their religious identity.

32. Ans: B

Exp:

- **Statement 1 is correct.** Pattachitra is a traditional cloth-based scroll painting known for its intricate details and mythological narratives. This art form is characterized by its vibrant colors, fine brushwork, and elaborate themes, often inspired by religious stories and folklore.
- **Statement 2 is incorrect.** Pattachitra art form originated in Odisha, not West Bengal. It is particularly associated with the town of Puri, where it is often used in the worship of Lord Jagannath. The art form is an integral part of the cultural and religious fabric of Odisha and is deeply connected to the Jagannath temple traditions.
- **Statement 3 is correct.** Pattachitra paintings often depict scenes from Hindu epics like the Ramayana and the Mahabharata, as well as the life and activities of Lord Jagannath. The narratives are depicted in a series of panels, making the paintings visually engaging and rich in storytelling. The themes often include religious festivals, deities, and mythological stories, which hold significance in the Hindu tradition.

33. Ans: D

Exp:

- **Statement 1 is correct.** The Director General of Employment (DGE) operates under the Ministry of Labour and Employment. The DGE plays a crucial role in formulating policies and programs related to employment and vocational training in India, ensuring that the workforce is equipped with the necessary skills to meet the demands of the labor market.
- **Statement 2 is correct.** The DGE is responsible for collecting and disseminating information related to employment and unemployment in India. This involves conducting surveys and studies to gather data on various aspects of the labor market, which is essential for policy-making and planning purposes.
- **Statement 3 is correct.** The DGE oversees the implementation of the National Career Service (NCS) project. The NCS is a one-stop solution that provides a wide range of employment-related services such as career counseling, job matching, and information on training and skill development programs. The project aims to bridge the gap between job seekers and employers, facilitating better employment opportunities for the youth of India.

34. Ans: D

Exp:

- Strait of Gibraltar is indeed between Spain and Morocco.
- Strait of Hormuz is between the Persian Gulf and the Gulf of Oman.
- Bering Strait is between Russia and the United States.
- Palk Strait is between India and Sri Lanka.

"Giant Hippos Bask Peacefully"

- **Gibraltar - Giant:** Connects the Giant continents of Europe (Spain) and Africa (Morocco).

- **Hormuz - Hippos:** The strait is like the "throat" of the world's oil supply, and hippos have big throats!
- **Bering - Bask:** Imagine polar bears basking between Russia and the USA.
- **Palk - Peacefully:** It's a relatively calm strait between India and Sri Lanka.

35. Ans: D

Exp:

- **Statement 1 is correct.** The cotton textile industry is one of the oldest and most important sectors of the Indian economy. It played a crucial role in the country's industrialization, especially during the British colonial period when cotton was one of the major exports. The industry has evolved over the years, contributing significantly to employment, economic growth, and export earnings.
- **Statement 2 is correct.** Maharashtra and Gujarat are the leading states in cotton textile production in India. These states have favorable climatic conditions for cotton cultivation, such as moderate rainfall and a suitable temperature range. Additionally, their proximity to cotton-growing areas ensures a steady supply of raw materials to the mills. The presence of well-developed infrastructure and skilled labor further supports the growth of the cotton textile industry in these regions.
- **Statement 3 is correct.** The introduction of the Goods and Services Tax (GST) in India has had a significant impact on various industries, including the cotton textile industry. By streamlining the tax structure and reducing the complexity of multiple indirect taxes, GST has helped in reducing logistical costs and improving the ease of doing business. This has enhanced the competitiveness of the Indian cotton textile industry in both domestic and international markets, making it more attractive for investment and expansion.

36. Ans: B

Exp:

- **An Initiative:** The NZAOA is a group of institutional investors (pension funds, insurers, sovereign wealth funds, etc.) convened by the UN Environment Program Finance Initiative (UNEP FI).
- **The Goal:** Members commit to achieving net-zero greenhouse gas (GHG) emissions within their investment portfolios by 2050. This aligns with the Paris Agreement's objective of limiting global warming to 1.5°C.
- **Focus:** The NZAOA targets the actions of asset owners, those with significant holdings and the power to influence the companies they invest in.
- **Climate Risk:** Asset owners recognize that climate change poses serious financial risks to their investments and the long-term health of the global economy.
- **Leadership Role:** Institutional investors have an immense opportunity to drive the transition to a net-zero economy by shifting their capital towards sustainable businesses and industries.
- **Systemic Shift:** The NZAOA aims to create a critical mass of investors committed to net-zero, signaling to businesses, governments, and the broader financial sector the need for rapid decarbonization.

37. Ans: B

Exp:

- **Statement I: The Citizenship Amendment Act (CAA) seeks to grant Indian citizenship to illegal immigrants belonging to Hindu, Sikh, Buddhist, Jain, Parsi, and Christian communities from Afghanistan, Bangladesh, and Pakistan who entered India before December 31, 2014.**
 - This statement is true. The Citizenship Amendment Act (CAA) was passed in December 2019 and aims to provide a pathway to Indian citizenship for persecuted minorities from Afghanistan, Bangladesh, and

Pakistan who are Hindus, Sikhs, Buddhists, Jains, Parsis, and Christians and who entered India on or before December 31, 2014.

- **Statement II: The CAA does not extend to Muslims, which has led to concerns about discrimination and violation of the principles of equality and secularism enshrined in the Indian Constitution.**
 - This statement is also true. The CAA has been criticized for excluding Muslims, leading to concerns about discrimination against a specific religious community and potential violations of the principles of equality and secularism as outlined in the Indian Constitution.
- **Connection between the Statements:** While both statements are true, Statement II is not the direct explanation of Statement I. Statement I describes the provisions of the CAA, while Statement II discusses the criticisms and concerns raised about the Act. The concerns about discrimination and secularism are consequences of the provisions outlined in Statement I but are not a direct explanation of those provisions.

38. Ans: A

Exp:

- **Statement 1 is incorrect.** While Shaivism was an important religion during the Gupta Age, it was not the predominant religion. The Gupta kings were known for their patronage of various religious traditions, including Vaishnavism and Buddhism.
- **Statement 2 is correct.** The institution of slavery was present during the Gupta period, although it was not as widespread or systematic as in other ancient civilizations.

39. Ans: C

Exp:

- **Statement 1 is correct.** The Chief Justice of India (CJI) has the authority to recommend the appointment of a High Court judge as an ad-hoc judge of the Supreme Court. This is

done to address the issue of backlog or pending cases in the Supreme Court. The appointment is made for a temporary period and requires the approval of the President of India. The ad-hoc judge has the same powers and privileges as a permanent judge of the Supreme Court during their tenure.

- **Statement 2 is correct.** The Chief Justices of the High Courts have the authority to recommend the appointment of duly qualified individuals as additional judges of the High Court. This provision is used to manage the workload and reduce the backlog of cases in the High Court. The appointment of additional judges is for a temporary period not exceeding two years and requires the approval of the President of India. These additional judges have the same powers and privileges as permanent judges of the High Court during their tenure.

40. Ans: D

Exp:

- **Statement 1 is correct.** The retting process for jute is typically carried out in stagnant or slow-moving waters, which helps to soften the plant tissues and separate the fibers from the stem. This process is crucial for obtaining high-quality jute fibers, which are then used in various applications, including the manufacturing of textiles, ropes, and sacks. The quality of water and the duration of the retting process can significantly affect the strength and texture of the jute fibers.
- **Statement 2 is correct.** The National Jute Policy was implemented by the Indian government to enhance the overall development of the jute sector. The policy aims to improve the quality and productivity of jute crops, promote diversification of jute products, and increase the competitiveness of the jute industry in both domestic and international markets. It also focuses on modernizing manufacturing processes, encouraging research and development, and

ensuring sustainable practices in jute cultivation and production.

- **Statement 3 is correct.** Jute is often referred to as the 'Golden Fiber' due to its shiny texture and significant economic contribution to the agricultural and industrial sectors, particularly in states like West Bengal and Assam. Jute is an important cash crop for millions of small farmers and laborers in these regions, contributing to their livelihoods. Additionally, the jute industry plays a vital role in the economy by providing employment opportunities and contributing to export earnings.

41. Ans: A

Exp:

- Jaisalmer is in Rajasthan, which is in the northern part of India.
- Durgapur is in West Bengal, located to the south of Jaisalmer but north of Rajahmundry.
- Rajahmundry is in Andhra Pradesh, further south.
- Kozhikode is in Kerala, which is in the southernmost part of this list.

42. Ans: A

Exp:

- **Statement 1 is correct.** The Environment and Climate Sustainability Working Group (ECSWG) is indeed a subsidiary body of the G20 that addresses global environmental and climate change issues. As part of the G20, which consists of the world's largest economies, ECSWG plays a crucial role in fostering international collaboration and dialogue on environmental sustainability and climate change mitigation. It works to develop and implement strategies that align with the broader goals of the G20 in promoting global economic stability and growth while ensuring environmental sustainability.
- **Statement 2 is correct.** One of the key objectives of ECSWG is to promote sustainable development by integrating

environmental considerations into the economic decision-making process. This involves encouraging G20 member countries to adopt policies and practices that not only support economic growth but also ensure the protection of the environment and the sustainable use of natural resources. By doing so, ECSWG aims to contribute to the global efforts in achieving the United Nations Sustainable Development Goals (SDGs), particularly those related to climate action, clean energy, and sustainable cities and communities.

- **Statement 3 is incorrect.** ECSWG was not directly involved in the formulation or endorsement of the Paris Agreement, which was negotiated under the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement is a landmark international treaty that aims to limit global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius. While ECSWG's work aligns with the objectives of the Paris Agreement in addressing climate change and promoting sustainability, the negotiation and endorsement of the agreement were carried out through the UNFCCC process with participation from countries around the world.

43. Ans: A

Exp:

- **Statement 1 is correct.** The Poona Pact was indeed an agreement between Mahatma Gandhi and Dr. B.R. Ambedkar to resolve the contentious issue of separate electorates for the depressed classes in British India. Gandhi opposed separate electorates, believing they would further divide Indian society, while Ambedkar advocated for them as a way to ensure political representation for the marginalized communities. The agreement was a compromise between these two positions.

- **Statement 2 is correct.** The Poona Pact resulted in the reservation of seats for the depressed classes within the general electorate, rather than separate electorates. A specific number of seats were allocated for the depressed classes in the provincial legislatures, ensuring their representation in the political process. This was a significant step towards addressing social inequality and providing a political voice to marginalized communities.
- **Statement 3 is incorrect.** The Poona Pact was indeed signed in 1932, following a period of intense negotiations between Gandhi and Ambedkar. It was not a part of the negotiations during the Third Round Table Conference, which occurred later. The pact was a result of Gandhi's hunger strike in protest against the British decision to grant separate electorates to the depressed classes, which led to further discussions and the eventual agreement between Gandhi and Ambedkar.

44. Ans: B

Exp:

- The First Round Table Conference saw representation from various Indian groups but was boycotted by the Indian National Congress (C).
- The Second Round Table Conference was attended by Mahatma Gandhi representing the Indian National Congress, but it did not lead to any significant breakthrough (B).
- The Third Round Table Conference led to the announcement of the Communal Award, which in turn led to the Poona Pact (A).

45. Ans: A

Exp:

- **Statement 1 is correct.** The Civil Disobedience Movement began with the Dandi March, where Gandhi and his followers made salt from seawater to protest against the British monopoly on salt production.

- **Statement 2 is correct.** The movement saw widespread non-cooperation with British authorities, including the refusal to pay taxes like the land tax and chowkidar tax.
- **Statement 3 is incorrect.** The Government of India Act 1935 was not a direct consequence of the Civil Disobedience Movement. It was part of a broader process of constitutional reforms and was not specifically designed to contain the unrest from the movement.

Important and interesting facts about the Civil Disobedience Movement

- The Dandi March, which kickstarted the movement, covered a distance of about 240 miles from Sabarmati Ashram to Dandi in Gujarat.
- The movement saw widespread participation across India, with people boycotting British goods, refusing to pay taxes, and resigning from government posts.
- Women played a significant role in the movement, participating in protests and promoting the use of locally made goods (Swadeshi).
- The movement was suspended in 1931 when Gandhi-Irwin Pact was signed, but it was resumed in 1932 after the failure of the Round Table Conferences.
- The movement significantly impacted British businesses in India and contributed to the eventual independence of India in 1947.

46. Ans: B

Exp:

- The 'China Plus One' strategy is a business approach adopted by multinational companies to mitigate the risks associated with over-reliance on China for manufacturing and supply chain operations. The strategy involves diversifying production and sourcing by establishing or expanding manufacturing facilities in an additional

country, alongside existing operations in China.

- **Popularity:** The strategy gained popularity due to several factors:
 - **Rising Labor Costs in China:** As China's economy developed, labor costs increased, reducing the cost advantage of manufacturing in the country.
 - **Trade Tensions:** Geopolitical tensions, particularly between China and the United States, led to trade uncertainties, tariffs, and restrictions, prompting companies to reconsider their dependence on Chinese manufacturing.
 - **Supply Chain Disruptions:** Events like the COVID-19 pandemic highlighted the vulnerabilities of concentrated supply chains. Disruptions in China had a ripple effect on global supply chains, emphasizing the need for diversification.
 - **Alternative Manufacturing Hubs:** Companies adopting the 'China Plus One' strategy often consider countries in Southeast Asia (such as Vietnam, Thailand, and Indonesia), India, and Mexico as alternative manufacturing destinations. These countries offer competitive labor costs, favorable investment policies, and growing infrastructure, making them attractive for companies looking to diversify their production base.

47. Ans: D

Exp:

- All the listed adaptations are strategies employed by desert plants to conserve water:
 - Reducing the size of leaves or modifying them into spines reduces the surface area for water loss through transpiration.
 - Succulent stems store water for use during dry periods.
 - Extensive root systems maximize water absorption from the soil.

- A waxy coating on leaves helps to reduce water loss by creating a barrier to evaporation.

48. Ans: D

Exp:

- **Statement 1 is correct.** The futures market does allow participants to buy and sell commodities or financial instruments at a predetermined future date and price.
- **Statement 2 is correct.** The FMC was the regulatory authority for the futures market in India until it was merged with SEBI in 2015.
- **Statement 3 is incorrect.** While agricultural commodities, metals, and energy products are major types of commodities traded in the futures market, other products such as financial instruments and currencies can also be traded.

49. Ans: A

Exp:

- **Statement 1 is correct.** Peer-to-peer (P2P) lending is a form of crowdfunding that enables individuals to borrow and lend money directly to each other, bypassing traditional financial institutions such as banks. This model allows borrowers to access funds more easily and enables lenders to earn interest on their investments. P2P lending platforms facilitate these transactions by providing a marketplace for borrowers and lenders to connect, set terms, and manage loans.
- **Statement 2 is correct.** In India, the Reserve Bank of India (RBI) regulates P2P lending platforms to ensure investor protection and maintain financial stability. The RBI has issued guidelines for the operation of P2P lending platforms, which include requirements for registration, governance, and risk management. These regulations are designed to safeguard the interests of participants in the P2P lending ecosystem and promote transparency and fairness.

- **Statement 3 is incorrect.** While P2P lending platforms in India are subject to regulations that aim to protect borrowers, there are no specific caps on interest rates or loan tenures imposed by the RBI. Instead, the regulations focus on ensuring transparency in the disclosure of terms and conditions, adherence to fair practices, and the implementation of a robust grievance redressal mechanism. Borrowers and lenders are free to negotiate the terms of the loans, including interest rates and repayment periods, within the framework of the platform's policies and RBI guidelines.

50. Ans: A

Exp:

- **Statement 1 is correct.** Unicellular organisms, also known as single-celled organisms, are capable of performing all the necessary functions of life within a single cell. These functions include respiration (the process of obtaining energy from nutrients), reproduction (the process of creating new organisms), and metabolism (the set of chemical reactions that occur within a living organism to maintain life). Examples of unicellular organisms include bacteria, archaea, and certain types of algae and protozoa.
- **Statement 2 is incorrect.** Unicellular organisms can be classified into two major groups: prokaryotes and eukaryotes. Prokaryotic unicellular organisms, such as bacteria and archaea, lack a defined nucleus and other membrane-bound organelles. Eukaryotic unicellular organisms, like certain algae and protozoa, have a defined nucleus and other organelles within their cell structure. This distinction highlights the diversity among unicellular organisms in terms of their cellular organization.
- **Statement 3 is incorrect.** While asexual reproduction is common among unicellular organisms, allowing them to quickly produce identical copies of themselves, some

unicellular organisms are also capable of sexual reproduction. Sexual reproduction involves the exchange of genetic material between two organisms, leading to greater genetic diversity. This can occur in various ways, such as conjugation in bacteria or syngamy in certain protozoa.

51. Ans: D

Exp:

- **All statements are correct.** The Awadh Kisan Sabha was established as a response to the oppressive practices of talukdars and landlords in the Awadh region of British India. The organization aimed to address the grievances of peasants, who were often subjected to high rents, illegal levies, and other forms of exploitation.
- Baba Ramchandra, a prominent peasant leader, played a crucial role in the struggle against the exploitation of peasants. He organized the farmers, led protests, and worked to raise awareness about their plight, making him a key figure in the movement.
- The peasant movement in Awadh gained momentum and became integrated with the broader Non-Cooperation Movement, led by Mahatma Gandhi. This integration highlighted the connection between peasant grievances and the national freedom struggle, as the fight against colonial exploitation extended from the urban centers to the rural countryside.
- The involvement of peasants in the freedom struggle, as seen through movements like the Awadh Kisan Sabha, underscored the importance of peasant movements in India's fight for independence. It demonstrated the widespread discontent against British rule and the collective desire for self-determination and social justice.

Facts about Awadh Kisan Sabha
<ul style="list-style-type: none"> • Formation: Established in 1920 in the Awadh region (now part of Uttar Pradesh), India.

- **Leaders:** Key figures included Jawaharlal Nehru, Baba Ramchandra, and other local leaders.
- **Purpose:** Organized to fight against the oppression of the talukdars and zamindars (landlords) who levied exorbitant rents and taxes on tenant farmers.
- **Methods:** Employed non-violent tactics, peasant marches, demonstrations, and refusal to pay unfair rents.

52. Ans: D

Exp:

- **All statements are correct.** Micro-LED technology is an emerging display technology that uses microscopic light-emitting diodes (LEDs) to create individual pixels. These tiny LEDs are much smaller than those used in traditional LED displays, allowing for higher pixel densities and more compact display panels.
- **Key Features of Micro-LED Technology:**
 - **High Brightness:** Micro-LED displays can achieve higher levels of brightness compared to OLED and LCD displays, making them suitable for use in various lighting conditions, including direct sunlight.
 - **Energy Efficiency:** Micro-LEDs consume less power, leading to increased energy efficiency and potentially longer battery life in portable devices.
 - **Improved Contrast and Color:** The technology offers excellent contrast ratios and wide color gamuts, resulting in vibrant and lifelike images.
 - **Fast Response Time:** Micro-LED displays have faster response times, reducing motion blur and providing smoother visuals for fast-paced content.
 - **Longevity:** Micro-LEDs are expected to have a longer lifespan due to their

inorganic nature, which makes them less prone to degradation over time compared to organic LEDs (OLEDs).

- **Applications of Micro-LED Technology:**
 - **Consumer Electronics:** Micro-LED technology is being explored for use in smartphones, tablets, smartwatches, and other wearable devices, where compact and energy-efficient displays are desirable.
 - **Televisions:** Large-format Micro-LED TVs are being developed to offer superior picture quality and energy efficiency.
 - **Augmented Reality (AR) and Virtual Reality (VR):** The compact size and high pixel density of Micro-LEDs make them suitable for use in AR and VR headsets, where immersive and high-resolution displays are crucial.
- **Challenges and Future Prospects:**
 - While Micro-LED technology holds great promise, there are several challenges to overcome, including the complexity and cost of manufacturing and assembling the tiny LEDs into display panels.
 - However, ongoing research and development efforts are aimed at addressing these challenges, and it is expected that Micro-LED technology will play a significant role in the future of display technology, offering new possibilities for a wide range of applications.

53. Ans: C

Exp:

- **Statement 1 is correct.** A First Information Report (FIR) is indeed a critical first step in the process of a criminal investigation of a cognizable offense. The FIR sets the criminal justice process in motion by providing the police with the initial information about the commission of a cognizable crime. It is a formal document that records the

complainant's information and the details of the offense, serving as a basis for the police to commence their investigation.

- **Statement 2 is incorrect:** The statement that only the victim or a witness can file an FIR is incorrect. In fact, anyone who has knowledge of the commission of a cognizable offense can file an FIR. This includes the victim, a witness, or any other person who has information about the crime. The police are bound to register the FIR based on the information provided by the informant, regardless of their direct involvement in the incident.
- **Statement 3 is incorrect.** FIRs can be both written and oral. When an FIR is given orally, the police are required to write it down, and it is the duty of the police officer to provide a copy of the FIR to the informant free of charge. This ensures that the informant has a record of the FIR and can verify the accuracy of the information recorded by the police.

Key Facts

- **Not Defined in Law:** Interestingly, the term "FIR" is not specifically defined in the Indian Penal Code (IPC) or the Code of Criminal Procedure (CrPC). It is, however, deeply embedded in police regulations and practices.
- **Section 154 CrPC:** The legal basis for an FIR lies in Section 154 of the CrPC, which mandates police to record information about cognizable offenses.
- **Document of Information, Not Evidence:** The FIR is primarily a document recording initial information about an alleged crime. It's not considered substantive evidence in itself but can be used for corroborative purposes in court.
- **Free of Cost:** There is no fee associated with registering an FIR.
- **Right to a Copy:** The informant (person giving the information) has the right to obtain a copy of the FIR.

54. Ans: C

Exp:

- Bleaching is a phenomenon where sponges, corals, and other marine organisms lose their color as a stress response to environmental changes. This can include fluctuations in temperature, alterations in light intensity, and changes in nutrient levels. The loss of color is typically due to the expulsion or degradation of symbiotic algae (zooxanthellae) that live within the tissues of these organisms and provide them with food through photosynthesis.
- **Significance:** Bleaching events are critical indicators of the health of marine ecosystems. Healthy coral reefs and sponge communities are usually vibrant and colorful, thanks to the presence of symbiotic algae. When these organisms bleach, it often signifies distress within the ecosystem, which can be caused by factors such as rising sea temperatures, pollution, or overexposure to sunlight.
- **Impact on Coral Reefs:** Coral reefs are particularly affected by bleaching events. Corals rely heavily on their symbiotic algae for energy and nutrients. When bleaching occurs, corals lose a significant source of nourishment, making them more susceptible to disease, starvation, and death. This can have cascading effects on the entire reef ecosystem, as many marine species depend on coral reefs for food, shelter, and breeding grounds.
- **Global Concern:** Bleaching events have become more frequent and severe in recent decades, largely due to global climate change and the warming of ocean waters. Large-scale bleaching events can lead to the degradation of coral reefs, loss of biodiversity, and disruption of marine food webs. Efforts to monitor, understand, and mitigate the impacts of bleaching are crucial for the conservation and preservation of marine ecosystems.

55. Ans: C

Exp:

- **Statements 1 and 2 are correct.** The Ajanta Caves are situated in Maharashtra, India, and are famed for their Buddhist paintings. These murals, which illustrate Jataka tales, are considered masterpieces of Buddhist religious art. The Jataka tales are stories about the previous lives of the Buddha, depicting moral and philosophical lessons.
- **Statement 3 is incorrect.** The construction of the Ajanta Caves was not confined to the Gupta period alone. Instead, it spanned several centuries, with the earliest caves dating back to the 2nd century BCE. The caves continued to be carved and painted until about the 5th century CE, reflecting a long period of artistic and religious development.
- The caves were obscured by dense forest and remained largely forgotten until their rediscovery in 1819 by a British officer named John Smith. While hunting a tiger, Smith stumbled upon the entrance to one of the caves, leading to the caves' reintroduction to the modern world. This rediscovery marked the beginning of a new era of appreciation and study of the art, architecture, and historical significance of the Ajanta Caves.

Key Facts
<ul style="list-style-type: none"> • Discovery: The caves were rediscovered accidentally by a British hunting party led by John Smith in 1819. The caves had been abandoned and were covered by thick jungle until their rediscovery. • Age: The caves date back to the period between the 2nd century BCE and the 5th century CE. They were built in two distinct phases: the first group of caves was constructed around the 2nd century BCE, while the second group was built between the 4th and 6th centuries CE.

- **Number of Caves:** There are a **total of 30 caves at Ajanta**, which include both chaitya-grihas (Buddhist shrines or prayer halls) and viharas (monastic cells or monasteries).
- **Art and Architecture:** The caves are renowned for their **magnificent frescoes, sculptures, and architecture**. The paintings depict various **Jataka tales (stories of the Buddha's previous lives), scenes** from the Buddha's life, and other Buddhist themes.
- **Painting Technique:** The murals in the caves are made using the **fresco technique**, where the paintings are done on wet plaster, allowing the colors to merge with the plaster for greater durability.
- **Preservation:** The Ajanta Caves have been **designated as a UNESCO World Heritage Site since 1983**. Efforts have been made to preserve and protect the caves and their artwork from environmental damage and human interference.

56. Ans: A

Exp:

- **Statements 1 and 2 are correct. Shikhara and Garbhagriha:** Nagara architecture is characterized by its distinctively shaped Shikhara, which is usually curvilinear and rises above the sanctum sanctorum, known as the Garbhagriha. The Garbhagriha is the innermost sanctum where the deity is enshrined, and it is typically located directly beneath the Shikhara. This vertical alignment is a hallmark of Nagara temple architecture, symbolizing the ascent to the divine.
- **Statement 3 is incorrect. Mandapas, or assembly halls,** are common elements in Nagara temples. However, they are not confined to a specific shape or roof style. Mandapas can be square, rectangular, or even octagonal, and their roofs can be flat or pyramidal. The diversity in the design of

Mandapas adds to the architectural richness of Nagara temples and provides space for devotees to gather and participate in rituals.

- Nagara temple architecture exhibits a wide range of styles and variations, depending on the region and period of construction. Some temples feature elaborate carvings and sculptures, while others have simpler designs.
- The adaptability and diversity of Nagara architecture have contributed to its enduring legacy in Indian temple architecture. While Mandapas are common in Nagara temples, they are not always rectangular or covered with a flat roof; they can have varied shapes and roof styles.

57. Ans: B

Exp:

- **The correct chronological order is:**
 - **Alexander the Great's invasion (326 BCE):** Alexander's invasion of India marked the beginning of significant interaction between India and the Hellenistic world. His campaign extended into the Punjab region of India, but he eventually turned back due to the resistance of Indian kingdoms and the reluctance of his troops to proceed further.
 - **Arab invasion of Sindh (712 CE):** The Arab invasion led by Muhammad bin Qasim marked the beginning of Islamic rule in the Indian subcontinent. The conquest of Sindh established a base for further expansion of the Islamic Caliphate into India.
 - **First Turkic invasion by Mahmud of Ghazni (beginning in 1001 CE):** Mahmud of Ghazni, a Turkic ruler from present-day Afghanistan, conducted a series of raids and invasions into the Indian subcontinent. His expeditions were primarily aimed at plundering the wealth of Hindu temples and

establishing his dominance in the region.

- **Mongol invasions (13th-14th centuries CE):** The Mongols, under leaders like Genghis Khan and later his descendants, invaded the Indian subcontinent multiple times. However, they were unable to establish a lasting empire in India, unlike in other parts of Asia and Europe.

58. Ans: C

Exp:

Service voters in India are a special category of voters who are entitled to vote through postal ballots or electronically due to their nature of service. Here are some key facts about service voters in India:

- **Eligibility:** Service voters include members of the Armed Forces, members of the armed police forces of a state who are serving outside their state, and persons employed under the Government of India who are posted outside India.
- **Enrollment:** Service voters are enrolled in the electoral roll of the constituency in which their place of posting is located or in the constituency of their permanent residence, as declared by them.
- **Voting Method:** Service voters can cast their votes through postal ballots, which are sent to them by the Returning Officer of their constituency. In some cases, they can also use the Electronically Transmitted Postal Ballot System (ETPBS), which allows for faster and more secure transmission of postal ballots.
- **Special Provisions:** The Representation of the People Act, 1951, and the Conduct of Elections Rules, 1961, contain special provisions for the enrollment and voting of service voters to ensure that their service conditions do not deprive them of their right to vote.

- **Proxy Voting:** In certain cases, service voters are also allowed to appoint a proxy to cast their vote on their behalf in their constituency. This provision is mainly for armed forces personnel who are unable to be present in their constituency on the day of polling.
- **Confidentiality:** The identity and votes of service voters are kept confidential to ensure the secrecy of their ballot.
- **Role in Elections:** Service voters play a crucial role in elections, especially in constituencies with a significant presence of armed forces personnel, as their votes can influence the outcome of the election.

- **Statement 1 is correct.** Service voters are individuals serving in the armed forces, paramilitary forces, or posted outside India as government employees. They can vote in their home constituencies even if they are posted elsewhere.
- **Statement 2 is incorrect.** Proxy voting for service voters was proposed in the Representation of the People (Amendment) Bill, 2017, but it is not available to all service voters. Proxy voting is currently available only to certain categories of service voters, such as those serving in the armed forces and government officials posted abroad.
- **Statement 3 is correct.** The spouses of service voters, if residing with them at the place of posting, are also eligible to be enrolled as service voters. This provision ensures that the spouses can also participate in the electoral process despite being away from their usual place of residence due to the posting of the service voter.

59. Ans: D

Exp:

- **All the pairs mentioned are correctly matched with their respective disputed areas:**
 - Belgaum has been a contentious area between Karnataka and Maharashtra.

- The Rengma Hills have seen disputes between Assam and Nagaland.
- Chandigarh has been a bone of contention between Punjab and Haryana.
- The Kotia region has been a disputed territory between Andhra Pradesh and Odisha.

60. Ans: B

Exp:

- The Astasahasrika Prajnaparamita, meaning "**The Perfection of Wisdom in 8,000 Lines**," is a revered text in Mahayana Buddhism. It represents a foundational work in the Prajnaparamita (Perfection of Wisdom) literature, which is a collection of texts focused on the concept of wisdom (prajna) as a path to enlightenment.
- The Astasahasrika Prajnaparamita is part of the broader Buddhist canon known as the Tripitaka, which consists of three "**baskets**" or collections: the **Vinaya Pitaka** (monastic rules), the **Sutta Pitaka** (discourses of the Buddha), and the **Abhidhamma Pitaka** (philosophical and doctrinal analysis). Specifically, the Astasahasrika Prajnaparamita is associated with the Sutras in the Mahayana tradition, which are considered to be the teachings of the Buddha that emphasize the bodhisattva path and the cultivation of wisdom and compassion.
- The text delves into profound philosophical themes such as emptiness (shunyata), the nature of reality, and the concept of non-duality. It teaches that all phenomena are empty of inherent existence and that understanding this emptiness is essential for attaining enlightenment.
- The Astasahasrika Prajnaparamita has had a significant impact on the development of Mahayana Buddhism, influencing various schools of thought and practices. Its teachings on wisdom and compassion have shaped the ideals of the bodhisattva path, which is central to Mahayana philosophy.

- The text is believed to have been composed between the 1st century BCE and the 1st century CE, during a period of flourishing Buddhist thought and literature. It has been translated into several languages over the centuries and has inspired numerous commentaries and studies.

61. Ans: C**Exp:**

- **Purpose and Objectives:** The International North-South Transit Corridor (INSTC) is an ambitious infrastructure project that aims to connect India with Russia and other countries in Central Asia, the Caucasus, and Europe. Its primary objectives are to facilitate trade, enhance economic cooperation, and foster regional integration by providing a more efficient and cost-effective transportation route.
- **Components and Routes:** The INSTC encompasses various modes of transportation, including rail, road, and sea routes. Key components of the corridor include the ship, rail, and road routes connecting Indian ports (such as Mumbai) to Iranian ports (such as Bandar Abbas), onward to the Caspian Sea, and further into Russia and Europe. The corridor also extends into Central Asian countries, offering them access to global markets through the maritime routes of India.
- **Benefits:** The development of the INSTC is expected to bring several benefits, including:
 - **Reduced Transit Time:** The corridor aims to significantly reduce the transit time for cargo transportation between India and Russia, as well as other participating regions, compared to existing routes.
 - **Cost Efficiency:** By offering a shorter and more direct route, the INSTC is expected to lower transportation costs, making trade more economical for the involved countries.

- **Increased Trade:** The improved connectivity and reduced costs are anticipated to boost trade volumes and economic exchanges among the member countries.
- **Regional Connectivity:** The corridor will enhance connectivity not only between India and Russia but also among the countries of Central Asia, the Caucasus, and Europe, contributing to regional development.

62. Ans: B**Exp:**

- **Statement 1 is incorrect.** India's medical devices industry is not largely self-sufficient; the country relies on imports for a significant portion of its medical device needs. This is particularly true for high-end and sophisticated devices used in specialized medical fields. The dependence on imports highlights the need for increased domestic production and innovation in the sector.
- **Statement 2 is correct.** The Indian government has established Special Economic Zones (SEZs) and Medtech parks as part of its efforts to promote the growth of the Medical Devices Industry. These initiatives aim to provide a conducive environment for manufacturing, with benefits such as tax incentives, infrastructure support, and streamlined regulatory processes. The goal is to enhance domestic manufacturing capabilities and reduce the reliance on imports, ultimately leading to greater self-sufficiency in the medical devices sector.
- **Statement 3 is correct.** The Central Drugs Standard Control Organization (CDSCO), under the Ministry of Health and Family Welfare, is the regulatory authority responsible for overseeing the Medical Devices Industry in India. The CDSCO's mandate includes ensuring that medical devices meet the required standards of quality, safety, and efficacy. It is responsible

for granting approvals for the manufacture, import, sale, and distribution of medical devices in the country, as well as monitoring their performance and safety post-market.

63. Ans: D

Exp:

- **Statement 1 is correct.** The RTI Act mandates that public authorities must respond to RTI requests within 30 days, or within 48 hours for information concerning the life or liberty of a person.
- **Statement 2 is correct.** The Act applies to all constitutional authorities, including the executive, legislature, and judiciary, at both the central and state levels, ensuring transparency and accountability across government institutions.
- **Statement 3 is correct.** The Act specifies certain exemptions to protect national interests, including information that could compromise the sovereignty and integrity of India, the security of the State, and foreign relations.

Key Provisions of the Act

- **Section 2(f): Definition of Information:** Broad definition including records, documents, memos, opinions, emails, etc., held by a public authority.
- **Section 2(h): Definition of Public Authorities:** Includes any institution or authority established by the Constitution, by law made by Parliament or State Legislature, bodies owned, controlled, or substantially funded by the government, and even NGOs substantially financed by the government.
- **Section 6: Application Process:** Citizens can submit requests in writing or electronically, usually with a nominal fee.
- **Section 7: Time Limit for Response:** Public Information Officers (PIOs) must provide information within 30 days. In urgent cases (concerning life or liberty), information must be provided within 48 hours.

- **Section 8: Exemptions:** Certain categories of information are exempt from disclosure, including those affecting national security, foreign relations, scientific and economic interests, or ongoing investigations. However, the exemption can be overridden if there's a larger public interest.
- **Sections 18 & 19: Appellate Authorities:** Allows for a two-tier appeals process. If information is denied or delayed, citizens can first appeal to an officer senior to the PIO, and then to the Central/State Information Commission.

64. Ans: D

Exp:

- James Mill, a Scottish historian, economist, and political theorist, authored the seminal work "A History of British India" in 1817. The book was published in three volumes and became a cornerstone in the study of Indian history during the British colonial period.
- **Division of Indian History:** In his work, Mill divided Indian history into three distinct periods: Hindu, Muslim, and British. This division was based on the predominant religious and cultural influences during different eras. However, this categorization has been criticized for oversimplifying the complex tapestry of Indian history and for its lack of nuance in understanding the interactions between different cultures and religions.
- **Eurocentric Views:** Mill's portrayal of Indian society reflected the Eurocentric views of his time. He depicted Asian societies as less civilized compared to European societies, often highlighting what he perceived as the stagnant and despotic nature of Indian civilization. These views were in line with the Orientalist perspective that was prevalent among European scholars and officials during the colonial period.

- **Impact on British Policy:** "A History of British India" had a significant impact on British policy and administration in India. Mill's work provided a theoretical framework that justified British colonialism as a civilizing mission. It influenced the attitudes of British officials and the formulation of policies aimed at reforming and modernizing Indian society according to British values and practices.

65. Ans: B

Exp:

- **Evergreen Nature:** Tropical rainforests are characterized by their evergreen nature, meaning that the majority of trees retain their leaves throughout the year. Unlike deciduous trees that shed their leaves seasonally, evergreen trees in tropical rainforests have adapted to the constant warm and humid climate, allowing them to photosynthesize and grow year-round.
- **Leaf Shedding in Deciduous Forests:** In contrast to tropical rainforests, deciduous forests, which are typically found in temperate regions, have trees that shed their leaves during the dry or cold season to conserve water and energy. This adaptation helps them survive seasonal variations in temperature and precipitation.
- **Dense Canopy and Green Foliage:** Tropical rainforests are known for their dense canopy and lush green foliage. The canopy, formed by the overlapping branches and leaves of tall trees, creates a multi-layered habitat that supports a diverse range of plant and animal species. The continuous growth and photosynthesis of evergreen trees contribute to the rich biodiversity and ecological complexity of these forests.
- **Adaptations to Drier Periods:** Although tropical rainforests receive high annual rainfall, there can be drier periods. During these times, the evergreen nature of the forest ensures that the canopy remains intact, providing shade and maintaining humidity levels within the forest. This

microclimate helps to sustain the diverse plant and animal life that thrives in these ecosystems.

66. Ans: A

Exp:

The correct chronological order is:

- **Jallianwala Bagh Massacre (1919):** In a tragic and pivotal event, British troops under the command of General Dyer opened fire on a peaceful gathering of unarmed Indians in Amritsar, Punjab. The massacre resulted in hundreds of deaths and ignited widespread outrage, marking a turning point in India's struggle for independence. The incident exposed the brutalities of British colonial rule and galvanized the Indian population against the British authorities.
- **Non-Cooperation Movement (1920-1922):** Led by Mahatma Gandhi, this movement was a significant nonviolent campaign against British rule. Indians were encouraged to boycott British institutions, goods, and services, and to withdraw from government schools, courts, and offices. The movement gained massive support and demonstrated the power of collective nonviolent resistance, although it was eventually called off by Gandhi after the Chauri Chaura incident.
- **Formation of the Swaraj Party (1923):** Dissatisfied with the suspension of the Non-Cooperation Movement, leaders like Motilal Nehru and Chittaranjan Das formed the Swaraj Party with the aim of achieving self-governance (Swaraj) through constitutional means. The party sought to contest elections and influence British policies from within the legislative councils.
- **Chauri Chaura Incident (1922):** A violent clash between protestors and police in Chauri Chaura, Uttar Pradesh, led to the burning of a police station and the death of several policemen. In response to this deviation from the principles of nonviolence, Gandhi decided to halt the Non-Cooperation Movement, emphasizing the need for

discipline and adherence to nonviolent methods in the struggle for independence.

67. Ans: A

Exp:

- **Statement 1 is correct.** The Coriolis effect is a phenomenon that results from the Earth's rotation. It causes moving objects, such as wind and ocean currents, to be deflected to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. This deflection is due to the varying rotational speeds of different latitudes on the Earth's surface. The Coriolis effect plays a crucial role in shaping weather patterns and oceanic circulation, influencing the formation of cyclones, trade winds, and the Gulf Stream.
- **Statement 2 is incorrect.** The Intertropical Convergence Zone (ITCZ) is a dynamic belt of low pressure near the equator where trade winds from the Northern and Southern Hemispheres converge. The ITCZ is not stationary; its position shifts with the movement of the solar zenith (the point on the Earth's surface directly beneath the sun) throughout the year. As a result, the ITCZ migrates northward and southward of the equator, leading to seasonal variations in precipitation patterns in tropical regions. This movement is a key factor in determining the timing and intensity of rainy seasons in tropical climates.

68. Ans: B

Exp:

- **Pangong Tso:** Located at an altitude of approximately 4,350 meters, Pangong Tso is one of the largest brackish lakes in Asia, stretching about 134 kilometers across India and China. The lake is renowned for its striking blue waters that change color throughout the day, from azure to light blue to green and grey. Pangong Tso became internationally famous after being featured in the Bollywood movie "3 Idiots." The lake is a

critical habitat for migratory birds, including the bar-headed goose and the Brahmini duck.

- **Tsomoriri Lake:** Situated at an altitude of around 4,522 meters, Tsomoriri is a serene and beautiful lake in the Rupshu Valley of Ladakh. It is the largest high-altitude lake in India that is entirely within the country's territory. Tsomoriri is a Ramsar site, recognized for its ecological significance as a wetland of international importance. The lake and its surrounding area are home to diverse wildlife, including the Tibetan gazelle, the Tibetan wolf, and the endangered snow leopard.
- **Changthang Plateau:** Both Pangong Tso and Tsomoriri are located in the Changthang plateau, a high-altitude desert region in Ladakh. The plateau is characterized by its rugged terrain, vast plains, and unique wildlife. It is inhabited by the Changpa nomads, who practice traditional pastoralism, herding yaks, goats, and sheep.
- The lakes and their surrounding areas are part of the Changthang Wildlife Sanctuary, which is dedicated to preserving the unique flora and fauna of the region. The harsh climate and remote location have helped preserve the pristine nature of these lakes and their ecosystems.

69. Ans: C

Exp:

- **Great Indian Bustard:** The Great Indian Bustard (*Ardeotis nigriceps*) is a large bird found in the grasslands and arid regions of the Indian subcontinent. It is not classified as "Critically Endangered" on the IUCN Red List, but as "Endangered." It is not endemic to the Western Ghats, as its range extends across various parts of India. The Great Indian Bustard is considered a keystone species in its grassland ecosystem because its presence and activities significantly influence the structure and functioning of the habitat. The conservation of this species is crucial for

maintaining the health and biodiversity of grassland ecosystems.

- **Snow Leopard:** The Snow Leopard (*Panthera uncia*) is a large cat native to the mountain ranges of Central and South Asia, including the Himalayas in India. It is listed as "Vulnerable" on the IUCN Red List, not "Critically Endangered." The Snow Leopard is not endemic to the Western Ghats but is found in the higher altitudes of the Himalayas. It is considered a keystone species in its mountain ecosystem because it plays a critical role in maintaining the balance of prey and predator populations, which in turn influences the overall health of the ecosystem. Conservation efforts for the Snow Leopard are essential for preserving the biodiversity of mountain habitats.
- **Options (a), (b), and (d) are incorrect:** Both the Great Indian Bustard and the Snow Leopard are not classified as "Critically Endangered" under the IUCN Red List, nor are they endemic to the Western Ghats or species introduced from other countries to India. They are native species that play crucial roles in their respective ecosystems, making option (c) the correct answer.

70. Ans: D

Exp:

- **Freedom of Speech and Expression:** Article 19(1)(a) of the Constitution of India guarantees the fundamental right to freedom of speech and expression to all citizens. This right is essential for the functioning of a democratic society as it allows individuals to express their opinions, ideas, and beliefs freely.
- **Reasonable Restrictions:** While the freedom of speech and expression is a fundamental right, it is not absolute. Article 19(2) provides the State with the power to impose reasonable restrictions on this right in the interest of certain specified grounds. These restrictions are meant to balance individual

freedom with the collective interests of society.

- **Grounds for Restrictions:** The grounds for imposing restrictions under Article 19(2) include:
 - **Sovereignty and Integrity of India:** Restrictions can be imposed to protect the sovereignty and integrity of the country, ensuring that speech or expression does not threaten the nation's unity.
 - **Security of the State:** Speech that endangers the security of the State, such as incitement to violence or insurrection, can be restricted.
 - **Friendly Relations with Foreign States:** Expression that could harm India's relations with other countries may be curtailed to maintain diplomatic harmony.
 - **Public Order:** Restrictions may be imposed to prevent speech that could lead to disorder or disturbance of public peace.
 - **Decency or Morality:** The State can restrict obscene or indecent speech to uphold societal norms of decency and morality.
 - **Contempt of Court:** Speech that undermines the authority of the judiciary or interferes with the administration of justice can be restricted.
 - **Defamation:** Restrictions can be imposed to protect individuals' reputations against false and defamatory statements.
 - **Incitement to an Offense:** Speech that incites or encourages the commission of a criminal offense can be curtailed.
- **Balancing Rights and Restrictions:** The imposition of restrictions under Article 19(2) must be reasonable and proportionate. The courts in India play a crucial role in determining the validity of these restrictions, ensuring that they do not unduly infringe on the fundamental right to freedom of speech and expression.

71. Ans: B

Exp:

- Statement 1 is incorrect.** Payments Banks are a type of niche bank in India, conceptualized by the Reserve Bank of India (RBI). They operate under a specialized banking license that restricts their activities compared to traditional banks. Specifically, Payments Banks are not permitted to issue credit cards or provide loans to their customers. This limitation is in place to ensure that these banks focus on their primary objective of providing basic banking and payment services, especially to those who have limited access to formal banking channels.
- Statement 2 is correct.** The primary objective of Payments Banks is to enhance financial inclusion by offering basic banking services to the underserved segments of the population. These services include opening savings accounts, accepting deposits, offering remittance services, and providing mobile banking solutions. Payments Banks aim to reach out to millions of unbanked and underbanked individuals, including migrant workers, low-income households, and small businesses, thereby promoting greater access to financial services.
- Statement 3 is correct.** Payments Banks are allowed to accept deposits up to a maximum limit of ₹1 lakh per customer. This cap is designed to protect the interests of small savers and ensure that the focus of Payments Banks remains on providing basic banking services to a wider audience. The deposit limit also helps in managing the risk profile of these banks, as they are not engaged in lending activities.

Feature	Description
Objective	To increase financial inclusion by providing small savings accounts, payment and remittance services to the unbanked and

	underbanked segments of the population.
Regulatory Authority	Reserve Bank of India (RBI)
Establishment	Concept introduced by RBI in 2014, with the first payments banks commencing operations in 2016.
Deposit Limit	Payments banks can accept deposits up to a maximum of ₹2 lakh per individual customer.
Credit Facility	Payments banks are not allowed to lend money; they cannot offer credit facilities.
Foreign Shareholding	Foreign shareholding in payments banks is allowed up to 74% under the automatic route, subject to RBI guidelines and other regulatory conditions.
Interest on Deposits	Payments banks can offer interest on the deposits held in savings accounts.
Payment Services	They can offer services such as ATM/debit cards, net banking, mobile banking, and facilitate bill payments and remittances.
Investment of Deposits	They are required to invest a minimum of 75% of their demand deposit balances in government securities/Treasury Bills with maturity up to one year and hold a maximum of 25% in current and time/fixed deposits with other scheduled commercial banks.
Physical Access Points	Payments banks can set up physical access points (branches, business correspondents, automated

	teller machines) for banking services.
Examples	Airtel Payments Bank, India Post Payments Bank, Paytm Payments Bank, Fino Payments Bank, Jio Payments Bank.

72. Ans: C

Exp:

- **Statement 1 is correct.** Weathering is the process of breaking down rocks and minerals at the Earth's surface through physical, chemical, and biological means, leading to the formation of soil and regolith.
- **Statement 2 is correct.** Mass wasting, also known as mass movement, refers to the downslope movement of soil and rock under the direct influence of gravity, without the assistance of flowing water, wind, or ice.
- **Statement 3 is correct.** Erosion involves the transportation of weathered material from one location to another through natural agents like water, wind, and glaciers, shaping the Earth's surface over time.

73. Ans: B

Exp:

- **Statement 1 is correct.** The Consumer Price Index (CPI) is a critical economic indicator that measures the average change over time in the prices paid by consumers for a basket of goods and services. The basket includes various items such as transportation, food, and medical care, among others. The CPI is used to assess price changes associated with the cost of living, and it is often used as an inflation indicator.
- **Statement 2 is correct.** The base year for calculating the CPI in India was updated to 2012. The base year is a reference point used to compare price changes over time. Updating the base year is a standard practice in statistical measurement to ensure that the CPI reflects current consumption patterns and market prices.
- **Statement 3 is incorrect.** The CPI in India is compiled by the Central Statistics Office (CSO) under the Ministry of Statistics and Programme Implementation (MoSPI), not the Ministry of Finance. The CSO is responsible for collecting, analyzing, and disseminating statistical data on various economic indicators, including the CPI. The role of the Ministry of Finance is more related to fiscal policy and financial regulation, rather than the compilation of economic statistics.

Index	Consumer Price Index (CPI)	Wholesale Price Index (WPI)	Producer Price Index (PPI)
What it Measures	Average change in prices paid by consumers for a basket of goods and services	Average change in prices of goods at the wholesale level	Average change in selling prices received by domestic producers for their output
Components	Goods and services like food, clothing, housing, education, medical care	Primary Articles, Fuel and Power, Manufactured Products	Goods at the factory gate before retail markup
Usage	Measure of inflation, cost-of-living index, used to index wages, salaries, pensions	Monitor price movements in industry, manufacturing, construction, used for policy-making	Assess price trends from the producer's perspective, used in contract adjustments, economic analysis
Base Year in India	2012	2011-12	Not officially implemented in India yet

Perspective	Consumer	Wholesale	Producer
Coverage	Consumer goods and services	Goods at wholesale level	Goods at production level

74. Ans: C
Exp:

- **Statement 1 is correct.** The Mesolithic period is characterized by the use of microliths, which were small, finely crafted stone tools.
- **Statement 2 is incorrect.** Mesolithic people were known for their rock paintings, which are found in various sites, including Bhimbetka in India.
- **Statement 3 is correct.** Adamgarh is a significant Mesolithic site in India, known for its rock shelters and archaeological findings.

Key facts about Mesolithic Period

The Mesolithic period, also known as the Middle Stone Age, is an important era in human prehistory. Here are some key facts about the Mesolithic period:

- **Time Frame:** The Mesolithic period dates from around 10,000 BCE to about 5,000 BCE, although the exact dates can vary depending on the region. It bridges the gap between the Paleolithic (Old Stone Age) and the Neolithic (New Stone Age).
- **Climate Change:** The Mesolithic period coincided with significant climatic changes, including the end of the Last Glacial Maximum and the beginning of the Holocene, a warmer and more stable climate period.
- **Lifestyle:** During the Mesolithic, humans transitioned from a nomadic lifestyle of big-game hunting (as seen in the Paleolithic) to a more settled way of life that included fishing, hunting smaller game, and gathering a wider variety of plant foods.
- **Technological Advancements:** The Mesolithic is characterized by the development of microlithic tools, which were small, finely crafted stone tools such

as blades, points, and scrapers. These tools were often hafted onto handles or shafts to create composite tools like sickles, harpoons, and arrows.

- **Art and Symbolism:** Mesolithic people created art and engaged in symbolic practices, as evidenced by cave paintings, engravings, and personal ornaments found in archaeological sites.
 - **Settlements:** The period saw the emergence of semi-permanent settlements, particularly in regions with abundant food resources. Some of the earliest known settlements date to the Mesolithic period.
 - **Social Organization:** The social organization of Mesolithic communities is believed to have been relatively egalitarian, with a focus on communal living and sharing resources.
 - **Diet:** The diet of Mesolithic people was more diverse than that of their Paleolithic ancestors, including a variety of plant foods, fish, shellfish, and smaller game animals.
 - **Burial Practices:** Mesolithic burial practices varied, with some communities burying their dead in cemeteries and others practicing more individualized burial rites.
- Regional Variations:** The Mesolithic period exhibited significant regional variations, with different areas experiencing different rates of technological and social change.

75. Ans: B
Exp:
Long-Term Repo Operations (LTRO) by the Reserve Bank of India (RBI):

- **Purpose:** The primary purpose of Long-Term Repo Operations (LTRO) conducted by the Reserve Bank of India (RBI) is **to inject long-**

term liquidity into the banking system. This is achieved by providing banks with access to funds at reasonable interest rates for a longer duration.

- **Mechanism:** Under LTRO, the RBI offers to lend money to banks through repurchase agreements (repos) for a specified term, typically ranging from one to three years. Banks can use this liquidity to extend loans and credit to businesses and individuals, thereby supporting economic activities.
- **Interest Rates:** The interest rate for LTRO is usually fixed and is determined based on the prevailing market rates. By offering funds at a fixed rate, the RBI provides certainty to banks regarding their borrowing costs, which can encourage them to lend more aggressively.
- **Supporting Economic Growth:** LTROs are particularly useful during periods of financial stress or uncertainty when banks may be hesitant to lend due to concerns about liquidity. By providing assured long-term funding, LTROs help banks to continue extending credit, which is crucial for sustaining economic growth and stability.
- **Impact on Monetary Policy:** LTROs are part of the RBI's monetary policy toolkit and are used alongside other measures such as repo rate adjustments and open market operations. By managing liquidity through LTROs, the RBI can influence borrowing costs and overall credit conditions in the economy.

76. Ans: B

Exp:

Portal	Associated Ministry	Purpose
DigiSevak Portal	Ministry of Electronics and Information Technology	Provides a platform for digital volunteers to contribute to various government and social projects.

Udyam Registration Portal	Ministry of Micro, Small, and Medium Enterprises (MSME)	Facilitates the registration of MSMEs, helping them access government schemes and benefits.
Poshan Tracker	Ministry of Women and Child Development	Used for monitoring the progress of the POSHAN Abhiyaan (National Nutrition Mission) to improve nutritional outcomes.

77. Ans: A

Exp:

- The Chemical Weapons Convention (CWC) is an international treaty that aims to eliminate the use, development, production, stockpiling, and transfer of chemical weapons. It was adopted in 1993 and came into force in 1997. The CWC is administered by the Organisation for the Prohibition of Chemical Weapons (OPCW), which oversees the implementation of the treaty and works to ensure that member states comply with its provisions.
- **Key points about the CWC:**
 - **Prohibition:** The treaty prohibits all member states from using, developing, producing, stockpiling, or transferring chemical weapons. It also requires states to destroy any existing chemical weapons and production facilities.
 - **Verification:** The CWC includes a verification regime to ensure compliance, which involves routine inspections of chemical facilities and monitoring of the destruction of chemical weapons.
 - **Assistance and Protection:** The treaty provides for assistance and protection

measures for states that are threatened or attacked with chemical weapons.

- **International Cooperation:** The CWC promotes international cooperation in the peaceful use of chemistry, including the exchange of scientific and technological information.
- **Membership:** As of now, 193 states have ratified or acceded to the CWC, making it one of the most widely adhered-to disarmament treaties.
- **Statement 1 is correct:** The Chemical Weapons Convention (CWC) is an arms control treaty that aims to eliminate an entire category of weapons of mass destruction by prohibiting the development, production, acquisition, stockpiling, retention, and use of chemical weapons. It was opened for signature in 1993 and entered into force in 1997. The treaty has been ratified by 193 states, making it one of the most widely supported arms control agreements.
- **Statement 2 is incorrect:** As of 2023, the United States of America is a party to the CWC. The U.S. ratified the treaty in 1997. However, North Korea is not a party to the CWC. North Korea is known to possess chemical weapons and has not joined the treaty. South Sudan, which gained independence in 2011, is also not a party to the CWC. South Sudan has not acceded to the treaty since its independence.

78. Ans: C

Exp:

- **Statement 1 is correct.** The International Air Transport Association (IATA) is a global trade association for the airline industry, representing around 290 airlines and accounting for 82% of total air traffic.
- **Statement 2 is correct.** IATA was established in 1945 with the aim of promoting safe, reliable, secure, and economical air travel. It works to support the aviation industry and improve the passenger experience through various initiatives and programs.

79. Ans: A

Exp:

- The **Travel and Tourism Competitiveness Report** is published by the World Economic Forum (WEF). It assesses the competitiveness of various countries in the travel and tourism sector based on factors such as infrastructure, natural resources, cultural resources, and business travel. The report provides valuable insights for policymakers and industry stakeholders to improve their tourism competitiveness.

Key Facts
<p>Four Sub-indexes: The TCI is comprised of the following sub-indexes:</p> <ul style="list-style-type: none"> ● Enabling Environment ● Travel & Tourism Policy and Enabling Conditions ● Infrastructure ● Natural and Cultural Resources <p>14 Pillars: These sub-indexes are further broken down into 14 pillars, each containing a set of individual indicators. Some key pillars include:</p> <ul style="list-style-type: none"> ● Safety and Security ● Health and Hygiene ● Price Competitiveness ● Environmental Sustainability

80. Ans: C

Exp:

- **Statement 1 is correct.** The National MPI is a comprehensive measure that assesses poverty by considering multiple dimensions, including health, education, and living standards, to provide a broader understanding of poverty beyond mere income levels.
- **Statement 2 is incorrect.** The National MPI is not calculated and published by the World Bank. In India, the NITI Aayog released the National MPI, which is based on the global MPI methodology developed by the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP).

- **Statement 3 is correct.** The National MPI provides a more holistic measure of poverty, capturing various deprivations experienced by individuals and households, which is not solely based on income.

81. Ans: B

Exp:

- Treasury Bills (T-bills) are short-term debt instruments issued by the government to meet its short-term borrowing requirements.
- They are issued at a discount to their face value and are redeemed at face value upon maturity, with the difference representing the interest earned by the investors.
- T-bills do not pay periodic interest and are typically issued for maturities of 91 days, 182 days, and 364 days, making them short-term instruments, not long-term.

82. Ans: A

Exp:

- G-Secs or Government Securities are debt instruments issued by the central or state governments in India. They are considered risk-free since they are backed by the government. They are indeed issued through auctions conducted by the RBI on its electronic platform called E-Kuber.
- However, they are not exclusively issued by State Governments, as the central government also issues them. The interest payment frequency can vary and is not necessarily quarterly. Foreign Portfolio Investors (FPIs) are allowed to participate in the G-Secs market, subject to certain regulations and limits.

83. Ans: B

Exp:

- The new Foreign Trade Policy (FTP) approach is designed to enhance export competitiveness and facilitate trade by focusing on several key pillars:
- **Tax Remission:** The policy includes mechanisms like duty drawback schemes,

which allow exporters to claim a refund of customs duties paid on imported inputs used in the manufacture of exported goods. This reduces the cost of exporting and makes Indian products more competitive in the global market.

- **Trade Facilitation:** Simplifying procedures and reducing transaction costs are essential components of the new FTP. This includes streamlining customs processes, improving logistics infrastructure, and adopting digital technologies to make cross-border trade more efficient and less time-consuming.
- **Export Promotion:** The policy introduces various incentives and schemes to encourage exports. These may include financial assistance, marketing support, and subsidies to help exporters explore and penetrate new markets. The focus is on promoting high-value and high-potential products and services.
- **Focusing on Emerging Areas:** Diversifying into new markets and products is a critical aspect of the new FTP. The policy aims to identify and tap into emerging sectors with significant export potential, such as renewable energy, biotechnology, and e-commerce, to ensure sustainable export growth.

84. Ans: B

Exp:

Fertilizer Policy and Trends in India:

- **Price Regulation and Subsidies:** The Government of India regulates the prices of certain fertilizers like urea to ensure their affordability for farmers. Urea, being a crucial nitrogenous fertilizer, is provided to farmers at subsidized rates. The government bears the difference between the production cost and the selling price, making it more accessible to the agricultural sector. This policy aims to support farmers in maintaining soil fertility and crop productivity.
- **Import Dependency:** India is not a net exporter of fertilizers; rather, it imports a

significant amount of its fertilizer requirements. The country relies on imports to meet the demand for various types of fertilizers, including phosphatic and potassic fertilizers, which are essential for balanced crop nutrition. The dependency on imports is influenced by factors such as domestic production capacity, international market prices, and the availability of raw materials.

- **Fluctuations in Chemical Fertilizer Use:** The use of chemical fertilizers in India has not steadily declined; instead, it has experienced fluctuations based on agricultural trends, policies, and market dynamics. Factors such as government subsidies, crop patterns, and awareness of soil health management practices influence the consumption of chemical fertilizers.
- **Role of Organic Fertilizers:** Although organic fertilizers are gaining popularity due to their environmental and long-term soil health benefits, they do not yet constitute the majority of fertilizer use in India. Chemical fertilizers still dominate the market, primarily due to their immediate impact on crop yields and availability. However, there is a growing emphasis on promoting organic farming and the use of organic fertilizers to ensure sustainable agricultural practices.

85. Ans: C

Exp:

- The concept of a Social Stock Exchange (SSE) is a pioneering initiative aimed at creating a dedicated platform where both non-profit organizations (NPOs) and for-profit enterprises (FPEs) with social objectives can raise funds from the public.
- This innovative approach is designed to provide social enterprises with access to capital markets, enabling them to scale up their operations and impact.
- By facilitating the flow of capital to organizations that are working towards social and environmental goals, the SSE seeks to bridge the gap between socially conscious

investors and entities committed to creating positive societal change.

- This initiative represents a significant step towards integrating social responsibility and investment, offering a new avenue for funding social and environmental initiatives.

86. Ans: C

Exp:

- The Animal Husbandry Infrastructure Development Fund (AHIDF) is a government initiative aimed at enhancing the infrastructure and overall development of the animal husbandry sector in India. Here are some key details:
- **Objective:** The primary goal of AHIDF is to stimulate investment in the animal husbandry sector, thereby increasing productivity, improving quality, and promoting sustainable practices. By providing financial support for infrastructure development, the fund seeks to modernize the sector and make it more competitive.
- **Key Focus Areas:**
 - **Breed Improvement:** One of the main focus areas is improving the genetic quality of livestock through selective breeding, artificial insemination, and other modern techniques. This aims to enhance the productivity and profitability of animal farming.
 - **Veterinary and Drug Production Facilities:** The fund supports the establishment of advanced veterinary hospitals, clinics, and diagnostic centers to ensure better healthcare for animals. It also promotes the setting up of facilities for the production of veterinary drugs and vaccines.
 - **Waste Management:** Proper management of animal waste is crucial for environmental sustainability and disease prevention. AHIDF encourages the development of infrastructure for efficient waste disposal and recycling,

such as biogas plants and composting units.

- **Exclusion of Cold Storage for Fruits and Vegetables:** While cold storage facilities are essential for preserving perishable agricultural produce, they are not directly related to animal husbandry. Therefore, the construction of cold storage facilities for fruits and vegetables is not covered under the AHIDF. Instead, these facilities are supported by other schemes and initiatives focused on the broader agricultural sector.

87. Ans: C

Exp:

- Critical minerals are indeed essential to economic and national security, and they play a crucial role in clean energy and advanced technologies. Their classification as "critical" is often based on their importance in various industrial and technological applications, as well as potential supply chain vulnerabilities that could impact their availability.
 - **Antimony:** Used in flame retardants, lead-acid batteries, and alloys, antimony is considered critical due to its use in safety and transportation applications.
 - **Beryllium:** With its high strength-to-weight ratio and thermal conductivity, beryllium is used in aerospace, defense, and telecommunications industries, making it a critical mineral.
 - **Cobalt:** Essential for rechargeable batteries, cobalt is critical for the transition to clean energy and the growth of electric vehicles.
- On the other hand, coal is primarily used as an energy source and does not fall under the category of critical minerals. Its classification is based more on its role as a fossil fuel rather than its importance in advanced technologies or potential supply chain vulnerabilities.

88. Ans: C

Exp:

- **Statement 1 is correct.** CAR-T therapy involves genetically modifying a patient's T cells to express a chimeric antigen receptor (CAR) that targets specific antigens on cancer cells, enhancing the immune system's ability to attack and destroy the cancer cells.
- **Statement 2 is correct.** CAR-T therapy is typically administered as a single infusion, which can offer advantages over traditional chemotherapy in terms of treatment duration and recovery time. However, it's important to note that the response and side effects of CAR-T therapy can vary among patients.

89. Ans: B

Exp:

- **Statement 1 is incorrect.** BioRRAP is not limited to pharmaceutical research; it is a comprehensive portal for tracking regulatory approvals across various domains of biological research.
- **Statement 2 is correct.** By streamlining the approval process and providing a transparent and efficient platform for tracking regulatory clearances, BioRRAP enhances the credibility and ease of conducting biological research in India.

90. Ans: A

Exp:

- **Statement 1 is correct.** Open RAN (Radio Access Network) is indeed a standardized approach to radio access networks that promotes interoperability and integration between different vendors' equipment.
 - This approach is based on open interfaces and standardized specifications, allowing for a more diverse and competitive ecosystem of network equipment providers. By enabling interoperability, Open RAN facilitates the mixing and matching of hardware and software from different

vendors, leading to more flexible and customizable network deployments.

- **Statement 2 is incorrect.** The main objective of Open RAN is to reduce costs and increase flexibility in deploying and maintaining mobile networks, but it aims to achieve this through the use of open, non-proprietary hardware and software, rather than proprietary solutions. Open RAN seeks to break the reliance on single vendors and proprietary solutions by encouraging the use of standardized, open interfaces and off-the-shelf hardware.
 - This openness and standardization are expected to drive innovation, reduce deployment and operational costs, and provide operators with more choices in building and managing their networks.

91. Ans: A

Exp:

- **Statement 1 is correct:** QKD (Quantum Key Distribution) is fundamentally different from traditional cryptography because it relies on the unique properties of quantum mechanics:
 - **Superposition:** Qubits (quantum bits) can exist in multiple states simultaneously. Attempts to measure them fundamentally change their state, making eavesdropping detectable.
 - **Entanglement:** Entangled particles share an intrinsically linked fate. Measuring one instantaneously affects the other, regardless of distance, allowing for secure key exchange.
- **Statement 2 is incorrect:** Traditional cryptography relies heavily on mathematical complexity (like factoring large primes). The security lies in the difficulty of undoing the mathematical operations used for encryption. QKD's security comes from the laws of physics themselves.
- **Statement 3 is correct:** One of QKD's key advantages is the ability to generate a shared secret key even if the communication

channel is being monitored. This is done by using the properties of entangled photons and detecting any changes caused by eavesdropping attempts.

92. Ans: A

Exp:

- **Augmented Reality (AR)** - An enhanced version of reality created by using technology to overlay digital information on an image of something being viewed through a device.
 - AR adds digital elements like images, text, or 3D models onto a live view of the real world, usually through a smartphone or AR glasses. Think of games like Pokemon Go or wayfinding apps that use your camera.
- **Virtual Reality (VR)** - A fully immersive digital environment where users can interact with virtual objects as if they were real.
 - VR completely replaces your view of the real world with a computer-generated simulation. Headsets are used to create a sense of presence in a virtual environment where you can look around, move, and sometimes interact with objects.
- **Mixed Reality (MR)** - A blend of physical and digital worlds, where physical and virtual objects co-exist and interact in real-time.
 - MR combines the best of AR and VR. It not only overlays digital objects onto the real world but also anchors them with spatial awareness. Virtual objects can interact with real-world elements, like bouncing a virtual ball on a physical table. Tools like the Microsoft HoloLens are driving advances in MR.

93. Ans: A

Exp:

- **Statement 1 is correct.** IPv6 is indeed the latest version of the Internet Protocol, designed to replace IPv4. IPv4 has been in use since the early days of the internet, but due to the exponential growth of the internet, the

available IPv4 addresses are running out. IPv6 addresses this issue with a much larger address space.

- **Statement 2 is correct: IPv6 addresses are 128 bits long is correct.** IPv6 addresses are 128 bits long, which provides a significantly larger number of unique IP addresses compared to the 32-bit IPv4 addresses. This expanded address space is one of the primary reasons for the development of IPv6, as it can accommodate the growing number of internet-connected devices.
- **Statement 3 is incorrect: The transition from IPv4 to IPv6 is seamless is incorrect.** The transition from IPv4 to IPv6 is not entirely seamless and does require changes to the existing network infrastructure. Network devices, software, and systems need to be updated or configured to support IPv6. Additionally, compatibility and interoperability between IPv4 and IPv6 networks can pose challenges during the transition period.

Feature	IPv4	IPv6
Address Length	32 bits	128 bits
Address Format	Dotted decimal notation	Hexadecimal notation
Number of Addresses	Approximately 4.3 billion	Approximately 340 undecillion
Header Length	20 bytes	40 bytes
Fragmentation	Done by sender and forwarding routers	Done by sender only
Address Configuration	Manual or DHCP	Autoconfiguration or DHCPv6
Security	IPsec optional	IPsec mandatory
Broadcast Support	Yes	No (uses multicast instead)

NAT (Network Address Translation)	Commonly used	Not required due to large address space
Checksum in Header	Yes	No
Mobile IP Support	Requires additional protocols	Built-in support for mobile IP

94. Ans: B

Exp:

- Hoysala temples are celebrated for their unique architectural style, known as Vesara architecture, which represents a blend of Nagara (North Indian) and Dravidian (South Indian) architectural traditions. This fusion creates a **distinct aesthetic that sets Hoysala temples apart from other Indian temple architectures.**
- **Key features of Hoysala architecture include:**
 - **Star-shaped platforms:** Many Hoysala temples are built on star-shaped platforms, which adds complexity and elegance to the temple's layout. This design allows for intricate carving and decoration on the temple's outer walls.
 - **Intricately carved exteriors:** Hoysala temples are renowned for their detailed and elaborate carvings that cover almost every inch of the exterior walls. These carvings depict a variety of themes, including Hindu mythology, flora, fauna, and scenes from daily life.
 - **Lathe-turned pillars:** The interiors of Hoysala temples feature ornately carved pillars that are often created using a lathe. These pillars are smooth, polished, and exhibit a variety of intricate designs.
 - **Ceiling panels:** The ceilings of Hoysala temples are also elaborately decorated, often with finely carved panels depicting intricate patterns or mythological scenes.
 - **Sculpture and iconography:** Hoysala temples are adorned with a rich array of

sculptures that showcase the skill of Hoysala artisans. The iconography in these temples includes depictions of various Hindu deities, as well as other religious and cultural motifs.

- The Vesara style of Hoysala temples represents a significant evolution in Indian temple architecture, showcasing the innovative and artistic capabilities of Hoysala architects and craftsmen. The fusion of Nagara and Dravidian elements results in a harmonious and visually stunning architectural form that continues to captivate visitors and scholars alike.

Key Facts about Hoysala Temples

- **Time Period:** Hoysala temples were built over centuries during the Hoysala dynasty's rule, approximately from the 11th to 14th centuries CE.
- **Location:** These temples are primarily found in southern India, with a high concentration in the modern-day state of Karnataka.
- **Unique Style:** Hoysala architecture is distinctive, characterized by intricate carvings, elaborate ornamentation, and a profusion of скульптуры. This style is often called 'Vesara'.
- **Temple Design:** They often feature a star-shaped ground plan, and are raised on a platform (jagati).
- **Soapstone:** Their primary building material was soapstone, which is relatively soft and allowed for the detailed artistic work.

95. Ans: A

Exp:

- Bluebugging is a form of cybersecurity attack that targets Bluetooth-enabled devices. Unlike other Bluetooth vulnerabilities that may focus on data theft or unauthorized device connections, Bluebugging allows an attacker to gain more extensive control over the victim's device. Specifically, it enables

unauthorized access to various functions of the device, including the camera and microphone.

- This can lead to serious privacy breaches, as attackers can potentially listen in on conversations or take pictures without the device owner's knowledge or consent.
- **Key Points about Bluebugging:**
 - **Security Breach:** Bluebugging exploits vulnerabilities in a device's Bluetooth connection to gain unauthorized access to the device's controls and functionalities.
 - **Range of Control:** Once a device is bluebugged, the attacker can potentially access sensitive information, make phone calls, send messages, and access other features like the camera and microphone, depending on the level of security breach.
 - **Stealthy Nature:** Bluebugging attacks can be challenging to detect because they can be carried out discreetly, without alerting the device owner to the unauthorized access.
 - **Prevention:** To reduce the risk of bluebugging, it's essential to keep Bluetooth-enabled devices updated with the latest security patches, turn off Bluetooth when not in use, and avoid using Bluetooth in public or unsecured areas where attackers might be more likely to target devices.

96. Ans: B

Exp:

- **Statement 1 is incorrect.** The Places of Worship (Special Provisions) Act, 1991, actually freezes the religious character of a place of worship as it existed on August 15, 1947, not January 26, 1950. The Act prohibits the conversion of a place of worship or a section of a place of worship into a place of worship of a different religion or a different denomination of the same religion.

- **Statement 2 is incorrect.** The Act provides exemptions for any place of worship which is an ancient and historical monument or an archaeological site covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- **Statement 3 is correct.** The Act does prescribe a punishment for those who contravene its provisions, reinforcing the seriousness of maintaining the religious character of places of worship as they were in 1947.

Key Provisions of India's Places of Worship (Special Provisions) Act, 1991

Core Objectives:

- **Freeze Religious Status:** The law aims to maintain the religious identity of all places of worship as it existed on August 15th, 1947 (the day of India's independence).
- **Prohibit Conversions:** It forbids the forced conversion of any place of worship from one religious denomination to another.

Specific Provisions

- **Section 3: Bar on Conversion:** Explicitly prohibits the conversion of a place of worship's religious character.
- **Section 4(1): Declaration of Religious Character:** Mandates that a place of worship's religious nature will remain as it was on August 15th, 1947.
- **Section 4 (2): Abatement of Legal Proceedings:** Any pending court cases, suits, or legal proceedings regarding the conversion of the religious character of any place of worship stood nullified upon the Act's commencement.
- **Section 5: Ram Janmabhoomi-Babri Masjid Exception:** The Ayodhya dispute was specifically exempted from the Act.

97. Ans: B

Exp:

- **Statement 1 is correct.** The Representation of People Act, 1951, is a key piece of legislation that governs the conduct of

elections in India. It outlines the procedures for the election of members to the Lok Sabha (House of the People) and the Rajya Sabha (Council of States) at the national level, as well as to the Legislative Assemblies and Legislative Councils in the states. The Act also specifies the qualifications required for membership in these bodies and the grounds for disqualification.

- **Statement 2 is incorrect.** The minimum age required to be eligible to vote in elections in India was lowered from 21 years to 18 years by the 61st Amendment Act of 1988. Since then, any Indian citizen who is 18 years of age or older on the qualifying date (usually January 1 of the year of the electoral roll's revision) is eligible to vote in elections.
- **Statement 3 is correct.** The Representation of People Act, 1951, provides the legal framework for addressing electoral disputes and challenges. It outlines the procedures for filing election petitions, the grounds on which an election can be challenged, and the authorities responsible for adjudicating such disputes.

Key Provisions of Representation of People Act, 1951

- **Qualification of Voters:** The act lays down the qualifications and disqualifications for voters, including the age requirement (18 years or older) and residence criteria.
- **Disqualification of Candidates:** It specifies the grounds for disqualification of candidates, such as conviction for certain offenses, corrupt practices, failure to submit election expenses, and holding an office of profit under the government.
- **Filing of Nominations:** The act outlines the procedure for filing nomination papers for elections, including the requirement for a security deposit.
- **Election Campaign:** It regulates the conduct of election campaigns, including the prohibition of certain practices such as

bribery, undue influence, and the use of government resources for campaigning.

- **Counting of Votes and Declaration of Results:** The act details the process for counting votes, resolving disputes during counting, and the declaration of election results.
- **Election Petitions:** It provides for the filing of election petitions to challenge the validity of an election on specified grounds.
- **Bye-elections:** The act lays down the provisions for the conduct of bye-elections to fill vacancies that arise between general elections.
- **Maintenance of Electoral Rolls:** It mandates the maintenance and periodic revision of electoral rolls to ensure that they are up-to-date.
- **Limit on Election Expenses:** The act imposes limits on the amount that can be spent by candidates and political parties during election campaigns.
- **Election Offenses:** It defines various election offenses and prescribes penalties for their violation.

98. Ans: A

Exp:

- **Statement 1 is correct.** The First-Ever Fungal Priority Pathogens List (FPPL) is indeed a global initiative designed to identify and prioritize fungal pathogens that pose the greatest threat to human health. The primary goal of the FPPL is to guide research, surveillance, and public health interventions to address the growing challenge of fungal infections, particularly those that are difficult to diagnose and treat.
- **Statement 2 is correct.** One of the critical concerns addressed by the FPPL is the emergence of fungal pathogens that are resistant to multiple antifungal drugs. Antifungal resistance is a growing public health concern as it limits the effectiveness of

available treatments and increases the risk of severe and potentially life-threatening infections.

- **Statement 3 is incorrect.** While the FPPL is focused on fungal pathogens that impact human health, it is not primarily concerned with plant pathogens or agricultural challenges. There are separate initiatives and lists that prioritize plant pathogens for agricultural purposes, but the FPPL specifically targets fungi that pose a threat to human health.

99. Ans: A

Exp:

What is SFDR?

- **Joint Development:** A collaborative effort between India's Defence Research and Development Organisation (DRDO) and Russia.
- **Underlying Principle:** Based on the air-breathing ramjet engine concept. Ramjets don't use rotating compressors; they rely on the forward momentum of the missile to compress incoming air for combustion.
- **Fuel System:** Employs a solid-fuel booster, making it distinct from conventional liquid-fuel ramjets.
- **Thrust Modulation:** Features a hot gas flow controller for adjusting thrust during flight.

Key Advantages

- **Enhanced Range:** Due to the absence of an oxidizer (taking oxygen from the atmosphere), the missile is lighter, allowing for more fuel and a significantly longer range.
- **Supersonic Speeds:** SFDR-powered missiles can travel at supersonic speeds, making them highly effective at intercepting aerial targets.
- **Larger Payloads:** The weight savings from not carrying an oxidizer enable the missile to carry a larger payload.

- **High Maneuverability:** Ensures that fast-moving targets have difficulty escaping.

Applications

- **Air-to-Air Missiles:** The primary intended application of SFDR is to boost the effectiveness of Indian air-to-air missiles.
- **Potential Surface-to-Air Adaptation:** The technology holds promise for adaptation to surface-to-air missile systems.

- **Statement 1 is incorrect.** Solid Fuel Ducted Ramjet (SFDR) technology is not used in ballistic missiles but in air-to-air and surface-to-air missiles. Ballistic missiles follow a predetermined trajectory and do not require propulsion throughout their flight. In contrast, SFDR technology is used in missiles that need sustained propulsion and maneuverability, such as air-to-air and surface-to-air missiles.
- **Statement 2 is correct.** SFDR technology involves a solid-fueled ramjet engine, which provides continuous propulsion and allows the missile to maintain high speeds, typically in the supersonic range. The ramjet engine efficiently uses the incoming air to combust the solid fuel, generating thrust.
- **Statement 3 is correct.** One of the advantages of SFDR technology is its ability to throttle the engine's thrust during flight. This

capability allows for better control over the missile's speed and trajectory, enhancing its maneuverability and enabling more efficient energy management. It allows the missile to adjust its speed according to the requirements of different phases of flight or to respond to changing target positions.

100. Ans: A

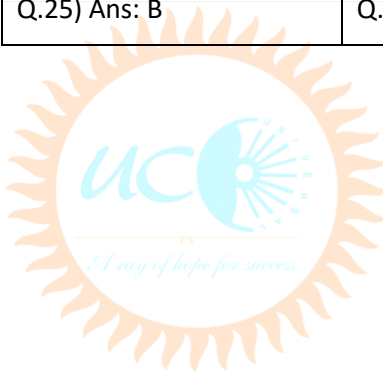
Exp:

- The Poverty Reduction and Growth Facility (PRGF) was established by the International Monetary Fund (IMF) in 1999 to provide concessional financial assistance to its low-income member countries.
- The PRGF was created to support these countries' efforts to implement poverty reduction and growth-oriented economic programs.
- It offers loans with highly concessional terms, including low-interest rates and long repayment periods, to help low-income countries address balance of payments problems and implement structural reforms.
- The PRGF was later replaced by the Poverty Reduction and Growth Trust (PRGT) in 2009, which continues to provide concessional financial assistance to low-income countries.

Answer Key

Q.1) Ans: A	Q.26) Ans: A	Q.51) Ans: D	Q.76) Ans: B
Q.2) Ans: C	Q.27) Ans: C	Q.52) Ans: D	Q.77) Ans: A
Q.3) Ans: A	Q.28) Ans: A	Q.53) Ans: C	Q.78) Ans: C
Q.4) Ans: A	Q.29) Ans: C	Q.54) Ans: C	Q.79) Ans: A
Q.5) Ans: C	Q.30) Ans: B	Q.55) Ans: C	Q.80) Ans: C
Q.6) Ans: C	Q.31) Ans: C	Q.56) Ans: A	Q.81) Ans: B
Q.7) Ans: D	Q.32) Ans: B	Q.57) Ans: B	Q.82) Ans: A
Q.8) Ans: B	Q.33) Ans: D	Q.58) Ans: C	Q.83) Ans: B
Q.9) Ans: C	Q.34) Ans: D	Q.59) Ans: D	Q.84) Ans: B
Q.10) Ans: B	Q.35) Ans: D	Q.60) Ans: B	Q.85) Ans: C

Q.11) Ans: B	Q.36) Ans: B	Q.61) Ans: C	Q.86) Ans: C
Q.12) Ans: B	Q.37) Ans: B	Q.62) Ans: B	Q.87) Ans: C
Q.13) Ans: B	Q.38) Ans: A	Q.63) Ans: D	Q.88) Ans: C
Q.14) Ans: D	Q.39) Ans: C	Q.64) Ans: D	Q.89) Ans: B
Q.15) Ans: D	Q.40) Ans: D	Q.65) Ans: B	Q.90) Ans: A
Q.16) Ans: A	Q.41) Ans: A	Q.66) Ans: A	Q.91) Ans: A
Q.17) Ans: C	Q.42) Ans: A	Q.67) Ans: A	Q.92) Ans: A
Q.18) Ans: A	Q.43) Ans: A	Q.68) Ans: C	Q.93) Ans: A
Q.19) Ans: A	Q.44) Ans: B	Q.69) Ans: D	Q.94) Ans: B
Q.20) Ans: B	Q.45) Ans: A	Q.70) Ans: D	Q.95) Ans: A
Q.21) Ans: B	Q.46) Ans: B	Q.71) Ans: B	Q.96) Ans: B
Q.22) Ans: A	Q.47) Ans: D	Q.72) Ans: B	Q.97) Ans: A
Q.23) Ans: B	Q.48) Ans: D	Q.73) Ans: B	Q.98) Ans: A
Q.24) Ans: A	Q.49) Ans: A	Q.74) Ans: C	Q.99) Ans: A
Q.25) Ans: B	Q.50) Ans: A	Q.75) Ans: B	Q.100) Ans: A



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