

Q.1)

Ans) c

Exp) Option c is the correct answer.

The **Juvenile Justice (Care and Protection of Children) Amendment Act, 2021** contains provisions related to children in conflict with law and children in need of care and protection. The Act seeks to introduce measures for strengthening the child protection setup.

**Statement 1 is incorrect:** The Act prescribes the **procedure for the adoption of children by prospective adoptive parents from India and abroad**. As per the Act, in cases where a person living abroad intends to adopt a child from his relative in India, he is **required to obtain an adoption order from the court**.

**Statement 2 is incorrect:** The Amendment Act **removed the provision of 'no appeal'** for any order made by a **Child Welfare Committee** finding that a person is not a child in need of care and protection. Now, within 30 days of such order, an appeal can be filed before the Divisional Commissioner. Such appeals should be disposed within 4 weeks.

**Statement 3 is correct:** The Amendment Act provides that **all offences (including serious offences) against children under the Act will be tried in the Children's Court**. Earlier, only those offences against children that are punishable with imprisonment of more than seven years, were to be tried in the Children's Court (equivalent to a Sessions Court). Other offences (punishable with imprisonment of less than seven years) were to be tried by a Judicial Magistrate.

**Statement 4 is correct:** Earlier, On the acceptance of the child by prospective adoptive parents, a specialised adoption agency applies to a civil court to obtain the adoption order. The adoption order issued by the court established that the child belongs to the adoptive parents. The Amendment Act provides that instead of the court, the **District Magistrate (including Additional District Magistrate) will issue such adoption orders**.

Source: <https://prsindia.org/billtrack/prs-products/prs-bill-summary-3636228833.pdf> (egazette.nic.in)

Parliament Passes Juvenile Justice (Care and Protection of Children) Amendment Bill 2021 -ForumIAS Blog

Q.2)

Ans) c

Exp) Option c is the correct answer.

The Indian Constitution is unique in its content and spirit. Though borrowed from almost every constitution of the world, the constitution of India has several salient features that distinguish it from the constitutions of other countries.

**Statement a is correct:** The first function of a constitution is to provide a **set of basic rules** that allow for **minimal coordination amongst members of a society**. Any group will need some basic rules that are publicly promulgated and known to all members of that group to achieve a **minimal degree of coordination**. Indian Constitution with various provisions enshrined in Fundamental Rights and DPSP's serves this purpose.

**Statement b is correct:** The second function of a constitution is to specify who has the **power to make decisions in a society. It decides how the government will be constituted**. For instance, Parliament gets to decide laws and policies, and that Parliament itself be organised in a particular manner. Before identifying what the law in any given society is, you have to identify who has the authority to enact it.

**Statement c is incorrect:** The Constitution of India is **neither rigid nor flexible** but a synthesis of both. The Constitution of India has opted for the British parliamentary System of Government rather than American Presidential System of Government. The **system of governance cannot be changed easily** as it is acknowledged as a part of basic structure by Supreme court.

**Statement d is correct:** The other function of a constitution is to enable the government to fulfil the **aspirations of a society** and create conditions for a **just society**. Constitutions are not only rules and regulations controlling the powers of the government. They also give powers to the government for pursuing **collective good of the society**.

Source: chap1Working.pmd (ncert.nic.in)

Q.3)

Ans) b

Exp) Option b is the correct answer.

**Statement 1 is correct:** The Indian constitution **does not specify the official languages to be used by the states** for the conduct of their official functions and leaves each state **free to**, through its legislature, **adopt Hindi or any language** used in its territory as its official language or languages. Supreme Court has held that there was no bar against a State Legislature declaring a language used in the State as an official language for the convenience of its citizens.

**Statement 2 is correct: The Eighth Schedule was intended to promote the progressive use of Hindi and for the enrichment and promotion of that language.** The Constitutional provisions relating to the Eighth Schedule occur in Articles 344(1) and 351 of the Constitution.

- 1) **Article 344(1)** provides for the constitution of a Commission by the President to make recommendations to the President for the progressive use of Hindi for official purposes of the Union.
- 2) **Article 351** of the Constitution provides that it shall be the duty of the Union to promote the spread of the Hindi language to develop it so that it may serve as a medium of expression for all the elements of the composite culture of India.

**Statement 3 is incorrect: The Eighth Schedule** to the Constitution consists of the following **22 languages:** Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.

Bodo, Dogri, Maithili, and Santhali were added by the 92<sup>nd</sup> Amendment Act of 2003 which came into force in 2004. **Tulu is not yet included under the Eighth Schedule** of Indian Constitution.

**Statement 4 is correct:** Article 345 of the Constitution says “the Legislature of a State may by law adopt **any one or more of the languages in use in the State** or Hindi as the language or languages to be used for all or any of the official purposes of that State.

According to Supreme Court, the separate mention of “Hindi” in the Article was only meant to promote Hindi among the States. This cannot be taken to mean that the particular State Legislature must sacrifice its power in promoting other languages within the State. The purpose of using Hindi separately in Article 345 is to facilitate adoption of Hindi across the States whether or not Hindi is in use in a particular State.

Source:

<https://books.google.co.in/books?id=d0EoDwAAQBAJ&pg=PA27&lpg=PA27&dq=The+Indian+constitution+does+not+specify+the+official+languages+to+be+used+by+the+states+for+the+conduct+of+their+official+functions+and+leaves+each+state+free+to,+through+its+legislature,+adopt+Hindi+or+any+language+used+in+its+territory+as+its+official+language+or&source=bl&ots=cyUzk1SUom&sig=ACfU3U1wrYHU3LOeoQrjM6DB6H3fr5eDAw&hl=en&sa=X&ved=2ahUKEwiq77LbxP72AhXSW3wKHcBEDGUQ6AF6BAGVEAM>

No legal bar on States designating official language - The Hindu

[https://www.mha.gov.in/sites/default/files/EighthSchedule\\_19052017.pdf](https://www.mha.gov.in/sites/default/files/EighthSchedule_19052017.pdf)

Laxmikanth Chapter 61 Official Language

Q.4)

Ans) c

Exp) Option c is the correct answer.

**Asymmetric federalism** means federalism based on **unequal powers and relationships** in political, administrative and fiscal arrangements between the units constituting a federation. Asymmetric federalism means **different constituent states possess different powers**. One or more of the states has considerably more independence than the others, though they have the same constitutional status. The division of powers is not symmetric.

**Asymmetric federalism in India:** In north-east there is a distinct difference in ethnicity from the rest of India. Several divisions are based on culture and other traditions. Most of these states were upgraded from the status of Union Territories. In Article 371 special powers are accorded to north-eastern states. The safeguards provided to these states through these special provisions include respect for customary laws, religious and social practices, restrictions on the ownership and transfer of land, and restrictions on the migration of non-residents to the State. State legislatures are typically given final control over changes in these provisions.

**Option a is incorrect:** Creative federalism/Picket fence federalism refers to the type of federalism that gave more power to the national government and bypassed the state governments to do so, thereby allowing the federal government to have direct control over state-wide programs.

**Option b is incorrect:** Dual federalism, also known as layer-cake federalism or divided sovereignty, is a political arrangement in which power is divided between the federal and state governments in clearly defined terms, with state governments exercising those powers accorded to them without interference from the federal government.

**Option d is incorrect:** Judicial federalism refers to the ability of the Supreme Court and judicial review to influence the type of federalism during certain times in the country. This happens mainly because of the judiciary and the Supreme Court's ability to rule on what is constitutional and what is not.

Source: [Answered] What do you understand by asymmetric federalism? Discuss the importance of asymmetric federalism in India. -ForumIAS Blog

In Manipur, a case for asymmetric federalism - The Hindu

12 Different Types of Federalism (with Examples and Pros & Cons) (elawtalk.com)

Q.5)

Ans) c

Exp) Option c is the correct answer.

**Statement a is correct:** The National Commission for Women was set up as statutory body in January 1992 under the National Commission for Women Act, 1990. It was established to review the constitutional and legal safeguards for women. It recommends remedial legislative measures, facilitates redressal of grievances and advises the government on all policy matters affecting the women.

**Statement b is correct:** National Commission for Women investigate and examine all the matters related to the safeguards provided for the women under the Constitution and other laws.

**Statement c is incorrect:** It does not have the power to choose its own members. The power of selecting members is vested with the Union Government and the nature of the country's volatile political scenario tends the commission to be politicized.

**Statement d is correct:** National Commission for Women looks into complaints, and takes Suo Moto notice of matters relating to – deprivation of women's rights, non-implementation of the laws and Non-compliance of the policy decisions guaranteeing the welfare for women society.

Source: National Commission for Women | ForumIAS Blog

About the Commission | National Commission for Women (ncw.nic.in)

Q.6)

Ans) b

Exp) Option b is the correct answer.

Recently, Supreme Court has clarified the position of law on the interplay of vertical and horizontal reservations. The December 18, 2021 decision by a two-judge Bench in Saurav Yadav versus State of Uttar Pradesh dealt with issues arising from the way different classes of reservation were to be applied in the selection process to fill posts of constables in the state.

**Option b is correct. Vertical Reservation:** Reservation for Scheduled Castes, Scheduled Tribes, and Other Backward Classes is referred to as vertical reservation. It applies separately for each of the groups specified under the law.

**Option a, c and d are incorrect. Horizontal reservation:** It refers to the equal opportunity provided to other categories of beneficiaries such as women, veterans, the transgender community, and individuals with disabilities, cutting through the vertical categories.

**Interplay between vertical and horizontal reservations:** The horizontal quota is applied separately to each vertical category, and not across the board. For example, if women have 50% horizontal quota, then half of the selected candidates will have to necessarily be women in each vertical quota category – i.e., half of all selected SC candidates will have to be women, half of the unreserved or general category will have to be women, and so on.

Source: Explained: How horizontal, vertical quotas work; what Supreme Court said | Explained News, The Indian Express

Q.7)

Ans) c

Exp) Option c is the correct answer.

**Statement 1 is incorrect:** Prime minister office (PMO) can be defined as the administrative agency created under article 77 (3) in order to provide secretarial assistance. **It has the status of department** under Allocation of Business rules 1961. **It is accorded as extra-constitutional body and not a statutory body.**

**On the other hand, Cabinet Secretariat is an executive body.** The Government of India (Allocation of Business) Rules, 1961 (AoB Rules) and the Government of India (Transaction of Business) Rules, 1961 (ToB Rules) have been framed under Article 77 (3) of the Constitution of India **and Cabinet Secretariat is responsible for administration** and implementation of both these rules.

**Statement 2 is incorrect: The Cabinet Secretariat functions directly under the Prime Minister.** The administrative head of the Secretariat is the Cabinet Secretary who is also the ex-officio Chairman of the Civil Services Board. Whereas, **PMO** is a staffing agency assisting the Prime Minister of India in the efficient discharge of his role, functions, and responsibilities. It **functions directly under the Prime Minister.**

**Statement 3 is correct: The PMO provides secretarial assistance to the Prime Minister.** It is headed by the Principal Secretary to the Prime Minister. PMO is an extra-constitutional body that has no mention in the Indian Constitution. However, it was given the **status of a department** under the Government of India Allocation of Business Rules, 1961.

On the other hand, the Cabinet Secretariat is responsible for the **administration of the Government of India (Transaction of Business) Rules, 1961** and the Government of India (Allocation of Business) Rules 1961, facilitating **smooth transaction of business in Ministries/ Departments** of the Government.

Source: Laxmikant 6th Edition.pdf

<https://cabsec.gov.in/content.php?page=12>

<https://egyankosh.ac.in/bitstream/123456789/25784/1/Unit-8.pdf>

Q.8)

Ans) b

Exp) Option b is the correct answer.

The concept of '**equality before law**' is of **British origin** while the concept of '**equal protection of laws**' has been taken from **the American Constitution.**

**Statement 1 is incorrect:** Equal protection of laws connotes: (a) the **equality of treatment under equal circumstances**, both in the privileges conferred and liabilities imposed by the laws, (b) the **similar application of the same laws to all persons** who are similarly situated, and (c) the like should be treated alike without any discrimination.

**Statement 2 is correct:** The concept of 'equality before law' connotes: (a) the **absence of any special privileges in favour of any person**, (b) the equal subjection of all persons to the ordinary law of the land administered by ordinary law courts, and (c) no person (whether rich or poor, high or low, official or non-official) is above the law.

**Statement 3 is incorrect:** The expression '**equality before law**' is a **negative concept** as it implies an absence of special privileges that favour any individual. However, the expression '**equal protection of law**' on the other hand, is a **positive concept** as it simply means that there should be equality of treatment of individuals in similar circumstances. However, **both of them aim at establishing equality of legal status, opportunity and justice.**

Source: Laxmikanth Chapter 7: Fundamental Rights

Equality before law and equal protection of law - iPleaders

Q.9)

Ans) b

Exp) Option b is the correct answer.

Under Article 75 (3), the Council of Ministers is collectively responsible to Lok Sabha and it remains in office till it enjoys confidence of majority of the members in Lok Sabha. Thus, a motion of no-confidence is moved to remove the council of ministers and thus oust the government from office.

**Statement 1 is correct:** A motion of no-confidence **need not state the reasons for its adoption in the Lok Sabha**. Censure Motion should state the reasons for its adoption in the Lok Sabha and is moved for censuring the council of ministers for specific policies and actions.

**Statement 2 is incorrect:** Article 118 of the Constitution permits each house of Parliament to make its own rules for conduct of business. Rule 198 of the Lok Sabha specifies the procedure for a motion of no-confidence. Any member may give a written notice before 10 am; the Speaker will read the motion of no-confidence in the House and ask all those favouring the motion to rise. **If there are 50 MPs in favour, the Speaker could allot a date for discussing the motion** – but this has to be within 10 days. The motion needs the support of 50 members to be admitted.

**Statement 3 is correct:** No Confidence Motion is moved against the **entire Council of Ministers including the Prime Minister** and not individual ministers or private members. Censure Motion can be moved against an individual minister or a group of ministers or the entire council of ministers.

**Statement 4 incorrect:** In the History of Indian Parliament, the Vajpayee government lost the no-confidence motion in 1999 by 1 vote which led to fall of his government.

The first non-Congress government which faced no-confidence motions twice was Morarji Desai's, who headed the Janata Party regime. One of these was brought by Congress leader Y B Chavan in July 1979. Desai resigned before the motion could be put to vote. This became the first no-confidence motion that led to fall of the government.

Source: FACT FILE | No-Confidence Motion in Lok Sabha | Monsoon Session 2018 - Pari Parliament  
Laxmikanth Chapter 22 Parliament

Q.10)

Ans) b

Exp) Option b is the correct answer.

**Pair 1 is correctly matched: Open Skies Treaty** was signed in 1992 and came into effect in 2002. It aims to build confidence among members through mutual openness thus reducing the chances of accidental war. It permits countries to **fly unarmed aircraft with cameras and other sensors** over the territory of the treaty's other 34 members states. Based on an idea advanced by Dwight Eisenhower in the 1950s, Open Skies provides for the collection of imagery of military installations and activities in order to foster transparency. **India is not a member of this treaty.**

**Pair 2 is incorrectly matched:** Essential Digital Infrastructure and Services Network (**EDISON**) Alliance aims to work towards ensuring **global and equitable access to the digital economy**. The **World Economic Forum** has announced the launch of this alliance in 2021. The alliance will work with governments and industries. It will accelerate digital inclusion and will ensure cross-sectoral collaboration between the technology industry and other critical sectors of the economy.

**Pair 3 is correctly matched: The Atlantic Charter** was signed by British Prime Minister Winston Churchill and U.S. President Franklin D. Roosevelt in August 1941. The charter set **out the common goals for the world after the Second World War.**

**The New Atlantic Charter** was written again by U.S. President Joe Biden and the UK Prime Minister Boris Johnson in their first meeting in the UK.

**Pair 4 is incorrectly matched:** Better than Cash Alliance was created in 2012 as a partnership of governments, companies and international organizations that **accelerates the transition from cash to responsible digital payments**. India and UN-Based **Better Than Cash Alliance** organized a joint Peer learning exchange on **fintech solutions for responsible digital payments** at the last mile.

Source: India and UN-Based Better Than Cash Alliance organizes learning on fintech solutions - ForumIAS Blog

After U.S. departure, Russia also withdraws from Open Skies Treaty (forumias.com)

The looming US withdrawal from the Open Skies Treaty (brookings.edu)

World Economic Forum launches EDISON Alliance| ForumIAS Blog

US President and UK PM to sign "New Atlantic Charter"-ForumIAS Blog

Q.11)

Ans) b

Exp) Option b is the correct answer.

To achieve social justice in society, governments might have to do more than just ensuring that laws and policies treat individuals in a fair manner. Social justice also concerns the **just distribution of resources**, whether it is between nations or between different groups and individuals within a society.

**Distributive justice** concerns the **socially just allocation of resources**. Often contrasted with just process, which is concerned with the administration of law, distributive justice **concentrates** on outcomes. **John Rawls theory of Justice is one of the examples of Distributive Justice**. In his book A Theory of Justice, John Rawls outlines his famous theory about justice as fairness. The theory consists of three core components:

- 1) The equality of people in rights and liberties;
- 2) The equality of opportunities for all; and
- 3) An arrangement of economic inequalities focused on benefit maximization for those who are least advantaged.

Source: 4Justice.pmd (ncert.nic.in)

Q.12)

Ans) b

Exp) Option b is the correct answer.

Doctrine of Laches states that the **court will only assist those people who are vigilant about their rights and not those who are not**. The underlying principle is that the court should not examine stale cases, because the court is to help an individual or party that is **vigilant** and not **indolent**.

**Option a is incorrect:** Doctrine of Eclipse states that any law that violates fundamental rights is not null or void ab initio, but is only non-enforceable, i.e., it is not dead but inactive.

**Option c is incorrect: Doctrine of Colourable Legislation:** The expression “colourable legislation” simply means **what cannot be done directly, cannot be done indirectly too**. It means when a legislature does not have the power to make laws on a particular subject directly, it cannot make laws on it indirectly. This doctrine is a tool used to determine the legislative competence of laws enacted by various legislatures. Therefore, it is a means to implement the separation of powers and impose judicial accountability. Basically, this doctrine implies that whatever is prohibited directly is prohibited indirectly also. This is intended to bar the legislature from doing something indirectly or covertly what it has been prohibited from doing directly.

It was applied by the Supreme Court of India in the case **State of Bihar vs Kameshwar Singh** and it was held that the Bihar Land Reforms Act was invalid.

**Option d is incorrect: Doctrine of Incidental or Ancillary Powers** implies that the power to legislate on a particular issue also includes the **power to legislate on ancillary matters** that are reasonably connected to that issue or subject. For instance, the power to impose taxes would also include the power to search and seizure in order to prevent tax evasion. Nevertheless, if a subject is explicitly mentioned in a Union or State List, it cannot be said to be an ancillary matter.

Source: Doctrine of colourable legislation : an impediment to the legislative authority - iPleaders

Q.13)

Ans) c

Exp) Option c is the correct answer.

**Statement 1 is correct:** In *Shanti Vs State of Harvana*, 1991. Supreme Court has stated that **the term dowry is not defined in Indian Penal Code**. However, it has been **defined in the Dowry Prohibition Act, 1961** as “any property or valuable security given or agreed to be given either directly or indirectly – (a) by one party to the marriage to the other party to the marriage; or (b) by the parents of either party to a marriage by any other person, to either party to the marriage or to any other person, at or before or any time after the marriage in connection with the marriage of the said parties, but does not include *dower* or *mahr* in the case of persons to whom the Muslim Personal Law (Shariat) applied.”

**Statement 2 is correct:** Supreme Court in 2018 has ruled that **no FIR can be registered** against a man and his family members under dowry harassment charges **after divorce**. Supreme Court held that prosecution

under Section 498A of IPC or under other provisions of the Dowry Prohibition Act will not be sustainable once a couple has separated under law.

Source: No FIR can be filed for dowry harassment after couple divorce: Supreme Court- The New Indian Express

Law Commission of India Note's

Q.14)

Ans) c

Exp) Option c is the correct answer.

The American Civil War broke out in 1860s. Before Civil War began, USA was the largest supplier of cotton to Britain. Once the civil war broke out, the **demand for cotton from India became high and this led to a surge in cotton cultivation in India**. By 1862 over 90 per cent of cotton imports into Britain came from India. However, within a few years the American Civil War ended, cotton production in America revived and Indian cotton export to Britain steadily declined. Thus, once the war in America ended, cotton demand from India sank and this affected the farmers adversely. Due to slump in demand, the prices of Cotton crashed in India.

Source: Chapter-2.pmd (ncert.nic.in)

Q.15)

Ans) a

Exp) Options a is the correct answer.

The budget is based on the principle of annuity, that is, the Parliament grants money to the government for one financial year.

Under the '**Rule of Lapse**' if the granted money is not spent by the end of the financial year, **then the balance expires and returns to the Consolidated Fund of India**. It facilitates **effective financial control** by the Parliament as no reserve funds can be built without its authorization. However, the observance of this rule leads to heavy rush of expenditure towards the close of the financial year. This is popularly called as '**March Rush**'.

Knowledge Base: Page 540, Laxmikant 6th Edition.pdf

Source: Laxmikant 6th Edition.pdf

Q.16)

Ans) a

Exp) Option a is the correct answer.

**Option a is correct:** Article 245 of the Constitution gives Parliament the **power to make laws for the whole or any part of India**, and state legislatures the power to make laws for the state. Parliament **draws its power to repeal a law from the same provision**.

**Option b is incorrect:** In the United Kingdom, all Appropriation Acts usually contain a repealing provision which specifically repeals older Appropriation Acts. In Australia the route followed is that of automatic repeal for Appropriation Acts.

In India, however, **no such mechanism is in place and Appropriation Acts continue to sit on statute-books**. The Law Commission recommended that a practice like the one of the United Kingdom to include a repeal clause in the Appropriation Act every year would serve a useful purpose, without necessitating major amendments or introduction of new laws.

**Option c is incorrect:** Laws in India can be repealed in two ways – **either through an ordinance, or through legislation**. In case an ordinance is used, it would need to be replaced by a law passed by Parliament within six months. If the ordinance lapses because it is not approved by Parliament, the repealed law can be revived.

**Option d is incorrect:** The legislation for repealing of the law **have to be passed by both Houses of Parliament**. The government recently brought **legislation to repeal the farm laws**. It will have to be passed by both Houses of Parliament, and receive the President's assent before it comes into effect. Usually, Bills titled **Repealing and Amendment are introduced for this purpose**.

Source: Explained: The process for repealing a law (forumias.com)

Explained: The Process Of Repealing A Law In The Parliament (indiatimes.com)

repeal.pdf (parliamentlibraryindia.nic.in)

Q.17)

Ans) b

Exp) Option b is the correct answer.

Bombay Stock Exchange (BSE) Ltd. has launched an **electronic spot platform**, “**BSE E-Agricultural Markets Ltd (BEAM)**”, for agricultural commodities through its subsidiary BSE Investments Ltd. The platform aims to boost the competitiveness of the Indian agricultural market by enhancing the strength of the BSE in financial markets, market technology and its vibrant ecosystem

**Features of BEAM:**

- 1) BEAM will function as a national level, institutionalised, electronic, transparent commodity spot trading platform in line with the Prime Minister's vision to create a single market.
- 2) With the help of BEAM, farmers in one state will be able to reach out to markets in other states and auction their produce.
- 3) The farmers will be able to discover the best prices for their products based on the quality, as well as build capacity to help intermediaries, processors and exporters procure from states.
- 4) It helps to reduce the cost of intermediation, to improve procurement efficiency, to enhance producers' realization and more competitive consumer prices.
- 5) It helps to eliminate the obstructions related to procurement and trading.

Source: agricultural commodities: BSE launches e-agricultural spot market platform - The Economic Times (indiatimes.com)

Q.18)

Ans) c

Exp) Option c is the correct answer.

Article 124 deals with the Establishment and constitution of the Supreme Court. It states that there shall be a Supreme Court of India constituting of a Chief Justice of India and, until Parliament by law prescribes a larger number of not more than 7 judges (which currently stands at 33).

**Statement 1 is incorrect:** The **President of India can appoint a judge of the Supreme Court as an acting Chief Justice of India** when: 1. the office of Chief Justice of India is vacant; or 2. the Chief Justice of India is temporarily absent; or 3. the Chief Justice of India is unable to perform the duties of his office.

**Statement 2 is correct:** When there is a lack of quorum of the permanent judges to hold or continue any session of the Supreme Court, the **Chief Justice of India can appoint a judge of a High Court as an ad hoc judge of the Supreme Court** for a temporary period. He can do so only after **consultation with the chief justice of the High Court** concerned and with the **previous consent of the president**.

**Statement 3 is correct:** At any time, the chief justice of India can **request a retired judge of the Supreme Court or a retired judge of a high court** (who is duly qualified for appointment as a judge of the Supreme Court) to **act as a judge of the Supreme Court for a temporary period**. He can do so **only with the previous consent of the president** and also of the person to be so appointed. Such a judge is entitled to such **allowances** as the **president** may determine. He will also enjoy all the jurisdiction, powers and privileges of a judge of Supreme Court. But he will not otherwise be deemed to be a judge of the Supreme Court.

Source: Laxmikanth Chapter 26 Supreme Court

Q.19)

Ans) d

Exp) Option d is the correct answer.

Public Accounts Committee was **set up first in 1921 under the provisions of the Government of India Act of 1919** and has since been in existence. At present, it consists of 22 members (15 from the Lok Sabha and 7 from the Rajya Sabha). The committee performs an important role in keeping a check on the executive.

**Statement 1 is correct:** Public Accounts Committee examine the **appropriation accounts and the finance accounts of the Union government and any other accounts laid before the Lok Sabha**. The appropriation accounts compare the actual expenditure with the expenditure sanctioned by the

Parliament through the Appropriation Act, while the finance accounts show the annual receipts and disbursements of the Union Government.

**Statement 2 is correct:** One of the functions of the committee is to **examine the annual audit reports** of the Comptroller and Auditor General of India (CAG), which are laid before the Parliament by the President. The committee is assisted by the CAG in the fulfilment of its functions.

**Statement 3 is correct:** Public Account Committee **examine the money spent on any service during a financial year** in excess of the amount granted by the Lok Sabha for that purpose. In the fulfilment of this functions, the committee is assisted by the CAG.

Source: Laxmikanth Chapter 23- Parliamentary committees

Q.20)

Ans) d

Exp) Option d is the correct answer.

**Statement 1 is incorrect:** The President can transfer a judge from one high court to another after consulting the Chief Justice of India. On transfer, he is entitled to receive in addition to his salary such compensatory allowance as may be determined by Parliament. In 1977, the Supreme Court ruled that the transfer of high court judges could be resorted to only as an **exceptional measure and only in public interest and not by way of punishment**. Again in 1994, the Supreme Court held that judicial review is necessary to check arbitrariness in transfer of judges. But, only the judge who is transferred can challenge it.

**Statement 2 is incorrect:** In the Third Judges case (1998), the Supreme Court opined that in case of the transfer of high court judges, **the Chief Justice of India should consult**, in addition to the collegium of **four senior most judges of the Supreme Court, the chief justice of the two high courts** (one from which the judge is being transferred and the other receiving him). Thus, the sole opinion of the chief justice of India does not constitute the 'consultation' process.

Source: Laxmikanth Chapter 34: High Court

Q.21)

Ans) c

Exp) Option c is the correct answer.

**Pair 1 is correct:** The **Independent Labour Party** was founded in **1936** by **Dr B R Ambedkar** to fight for the **rights of industrial workers and poor agricultural labourers**. Apart from being a champion for the rights of Dalits, Dr Ambedkar also fought for betterment of the workers. This organisation advocated for **living wages, decent working conditions** as well as the **right to form unions**.

This party **won 15 out of 17 seats** that it contested in **Bombay Legislative Assembly** in the 1937 elections. As the leader of this party Dr Ambedkar, during the Poona session of the Bombay Assembly in September 1937 **introduced a bill to abolish the Khoti system** of land tenure in Konkan. He also **opposed** the introduction of the **Industrial Disputes Bill, 1937** because it removed the workers' right to strike.

**Pair 2 is incorrect:** The **India League** was a **pre-Congress nationalist political association** founded in **1875** by **Sisir Kumar Ghosh (not Surendranath Bannerjee)**. The **aims** of this association were to create a **sense of nationalism** among the people and **encourage political education** among the **masses**.

**Surendranath Bannerjee** was the **founder** of the **Indian National Association** alongwith **Anand Mohan Bose**. It was founded in **1876**. It aimed to 1) create a **public opinion on political matters** 2) **unify Indian people in a common political programme**.

**Pair 3 is correct:** The **Justice Party** was the popular name for the **South Indian Liberation Federation**. It was founded in **1916** by **CN Mudaliar, Tyagaraja Chetty and TM Nair**. It was a famous **caste movement** fighting for the **rights and increased political representation** of **non-Brahmins** in **Madras presidency** and **starting the Dravidian movement** (led the anti-Hindi agitations of 1937-40). CN Mudaliar was instrumental in bringing together political opponents from 4 non-Brahmin parties at that time together, in order to create a united front in the form of the Justice Party.

M C Rajah, a famous Dalit leader was also associated with the Justice Party.

Source: [https://indianexpress.com/article/opinion/columns/br-ambekar-migrant-workers-international-labour-day-arjun-ram-meghwal-6387858/#:~:text=Independent%20Labour%20Party%20\(ILP\)%20in%201936](https://indianexpress.com/article/opinion/columns/br-ambekar-migrant-workers-international-labour-day-arjun-ram-meghwal-6387858/#:~:text=Independent%20Labour%20Party%20(ILP)%20in%201936)  
 Brief History of Modern India by Spectrum, 27th Edition, Ch-10, Pg 265; Appendix no 7.

Q.22)

Ans) a

Exp) Option a is the correct answer.

The Pandya dynasty was one of the 3 dynasties that ruled parts of South India, primarily during the Sangam Age (300 BCE-300CE). The main areas ruled by them were the south-eastern parts of South India - Tirunelveli, Ramnad and Madurai (which was the capital). They were famous for their silks, ivory and pearls.

**Statement 1 is correct:** Although the **polities** of Sangam Age were more **tribal** in **character** than the monarchies that came later, the **Taxation** in them, including in the **Pandya** kingdom, was **compulsory and regular**.

This was **unlike** the **Early Vedic polities** which were also **tribal** in character, but where **taxation was voluntary** in nature and not collected regularly.

This **regular taxation** allowed the Pandya kings to **maintain a regular army** and fight wars to capture or defend territories, as well as facilitate economy, such as trade operations, transportation, etc.

**Statement 2 is correct:** The concept of **Varna** had **only recently** been **introduced** in South India, when the Pandya dynasty emerged. As a result the **various rules and distinctions** that were associated with Varnas and castes **hadn't crystallised or become sharp and rigid** by then.

There were **few**, if any **restrictions on eating together or intermarrying** among castes. There have been records of cases where members of the ruling class '**Arasar**' have **married** into the rich peasant castes called the '**Vellalas**'. The **Tamil Brahmins** are said to have **consumed meat and alcohol**. The rich peasants, **Vellalas**, held **civil and military posts** and were not simply limited to the profession of agricultural production, etc.

**Statement 3 is incorrect:** Although the **attitude** of the **society towards women** was **mostly progressive**, the evil practice of **Sati** was **prevalent in the higher strata of society**, albeit it was **voluntary**. The **condition of widows** was also **generally poor** and they lived a very **harsh life** with many restrictions on lifestyle.

It must be noted that there were women who were educated. Female Sangam poets are a testament to this.

Source: Old NCERT Class 11th, Ancient Indian History by RS Sharma, Ch-17, Pg 122, 124;

Ancient & Medieval Indian History by Poonam Dahiya, 1st edition, Ch-7, Pg 7.34, 7.35, 7.36

Q.23)

Ans) d

Exp) Option d is the correct answer.

Raja Ram Mohan Roy was a 19th century Bengali social reformer and early nationalist. He was most famous for his lifelong battle against the social evil of Sati and key role in getting the legislation to ban it passed in 1829. He was also the founder of the famous social reform organisation Brahmo Samaj.

**Statement a is incorrect:** He believed in **prayers, meditation and reading of Upanishads** as the **only form of worship**. He **opposed idolatry and all forms of sacrifices and rituals**.

He believed in **monotheism**, as preached in the **Upanishads (Brahman-the eternal reality)**. In 1814, he set up the Atmiya Sabha (or Society of Friends) in Calcutta **to propagate the monotheistic ideals of the Vedanta** and to campaign against idolatry.

**Statement b is incorrect:** The **first organisation** founded by him was **Atmiya Sabha (not Brahmo Sabha)** in **1814**. It was also known as the "**Society of Friends**". Its aims were to propagate **monotheistic ideals of Vedanta** and reform Hinduism by campaigning **against idolatry, caste rigidities, rituals**, etc.

**Brahmo Sabha** was founded by Raja Ram Mohan Roy much **later in 1828**.

**Statement c is incorrect:** The **main (but not the sole) focus** of Raja Ram Mohan Roy's social reform campaigns was **abolishment** of the evil practice of **Sati**. As far as reforms in the conditions of women are

related, he also worked for the **improvement** in the **conditions of widows** - ensuring their **property rights**, and also providing women **education and banning polygamy**. He **advocated** for **equal rights** for women in all spheres of life.

**Statement d is correct:** Raja Ram Mohan Roy was a **rationalist** social reformer. This means that while he **respected** the **original scriptures like the Upanishads**, he **didn't believe** them to be **infallible**. He believed that a human being must **not blindly follow any ideas** and must **apply their mind** and rationale to **decide** whether an **action** was **morally correct and humane** or not.

This is in contrast to some revivalist social reformers of the 19th century like Swami Dayanand Saraswati and his Arya Samaj who believed that scriptures like the Vedas were infallible and must be followed without question.

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-9, Pg 220, 221, 239

Q.24)

Ans) a

Exp) Option a is the correct answer.

The Delhi Sultanate is the period of political history of North India in medieval times between the 13<sup>th</sup> century CE and 15<sup>th</sup> century CE. It was marked by the rule of **dynasties of Turkish or Afghan origin** and included the rule Mamluk, the Khilji, the Tughlaq, the Sayyid and the Lodhi Dynasties.

The **correct chronological order** is 3)-Capital was shifted from Lahore to Delhi (1211-1236)-> 2) System of Dagh and Chehra was introduced (1295-1316) -> 1) Introduction of Token currency (1330s) -> 4) Establishment of Department of Public Works (1350-88)

**3- Iltutmish (1211-1236)** shifted his capital from Lahore to Delhi.

**2- System of Dagh and Chehra:** was initiated by **Alauddin Khilji** during his reign (**1296-1316**). Alauddin Khilji maintained a large permanent standing army and paid them in cash from the royal treasury. He introduced the system of dagh (branding of horses) and prepared chehra (descriptive list of soldiers). In order to ensure maximum efficiency, a strict review of army from time to time was carried out.

**1-Introduction of Token Currency:** This was a step taken by **Muhammad bin Tughlaq** after his **decision to shift the capital** from Delhi to Deogir (1327) - so it is pegged by historians to be somewhere in the **1330s**. Muhammad bin Tughlaq decided to issue a new token currency which meant the **face value** of the currency would be **more than its intrinsic value**. It was a **copper and brass alloy** but given the **value** equivalent to a **silver Tanka**, on the promise of the state treasury. Although a very modern idea, it was way ahead of its time. Due to **poor understanding, poor execution and deceit** of the people, this experiment **failed** and the market was **flooded with counterfeits**. The Sultan **had to buy back** all the coins in circulation, which significantly depleted the treasury.

**4-Establishment of Department of Public Works:** **Firuz Shah Tughlaq (1351-88)** was deeply interested in **welfare** works. He **established a department of Public Works** which created **structures of public use** like **rest houses** for travellers, pilgrims and merchants; **charitable hospitals** (*Dar-ul-Shafa*), **gardens & orchards**, **canals & wells**, etc.

Source: <https://www.livemint.com/Sundayapp/oK5m9vrkAddF0aLNBz0VTI/Muhammad-bin-Tughlaq-The-Sultan-of-Swing.html#:~:text=1329%2C%20he%20declared%20Devagiri>

OLD NCERT Class 12th Medieval India by Satish Chandra, Ch-7, Pg - 129 to 134

Q.25)

Ans) d

Exp) Option d is the correct answer.

**Statement a is incorrect:** The practice of **slavery** has been **mentioned** for the **first time** in **Rig Vedic texts**. So, it may be said that **simple slavery**, mostly of **domestic servant** type (not for agriculture or other production purposes) **existed** in ancient Indian society **since Early Vedic Age** at around **1000 BCE**. This was **much before** the **Mauryan Age (3<sup>rd</sup> century BCE)**.

**Statement b is incorrect:** Texts **contemporary** with the **Post Mauryan period**, like **Manu smriti, jatakas**, etc make **mention** of **Chandalas (untouchables)** and the rules they had to observe in society. It may be said that **untouchability** had become a **prominent feature** of society **from post Mauryan period (200**

**BCE to 200 CE) not Gupta period (3<sup>rd</sup> century CE–6<sup>th</sup> century CE) onwards.** Before this, there has been mention of Sudras as the varna providing labour to other varnas, but there were no mentions of untouchability.

**Statement c is incorrect:** The **participation of women in public life in political and economic spheres** began **reducing progressively** following the **Later Vedic Age**. However, **at no time** did it become **non-existent**. Even during the Gupta Age, there are instances like Prabhavati Gupta, who held territories and ruled them and also as regent for her son after her husband's death. **Women of lower varnas**, especially those involved in **production and labour**, e.g., agriculture **participated in the economy as well**; as did a few women who participated in trade. However, on the whole women were increasingly **relegated to domestic duties** with passage of time and their education and political and economic participation were curtailed, especially among the higher Varnas.

**Statement d is correct:** The **condition of untouchables or Antyaja**, as they were known, **worsened** during the **Gupta Age**. But the **conditions of Sudras improved**. They were **allowed to hear divine texts** like **Ramayana, Puranas**, etc; they were **allowed to worship** a new **incarnation of Vishnu** - Krishna; They were **allowed to do some simple domestic rights and rituals** so that **more fee** came to the Brahmins, etc. All this may be attributed to the **improved economic conditions** of **Sudra** (producers like craftsmen and agriculturists) due to a **booming urban economy**.

Source: IGNOU MA - EHI 02;

A History of Modern and Medieval India by Upinder Singh.

Q.26)

Ans) c

Exp) Option c is the correct answer.

After the 15th century, owing to the spirit of exploration and mercantilism in Europe during Renaissance, many countries sent explorations to far away lands like India and South East Asia. This led to the entry of many European commercial enterprises in India who competed with each other for a bigger share in trade between Europe and India, whose export items (like spices, silk, muslin, indigo) were in great demand.

**Statement 1 is correct:** The **Portuguese** were the **first European power** to bring its commercial ventures to India as early as the start of **16th century CE**. However, by the **18th century**, their **power and competitive edge** in commerce in India had **substantially declined**. Among many other reasons, one of the reasons for this was that around this time the **Portuguese discovered Brazil** which was **rich in resources** like **minerals, metals, timber, gold, etc** and their **attention**, and subsequently **royal support** in the form of **resources** was **diverted to the colonisation of Brazil** rather than India. Thus, with **lesser resources** in the form of money, men, arms, etc, the **Portuguese could not maintain their effective monopoly** over commerce with India, and other European powers began to overtake them.

**Statement 2 is incorrect:** The **English and Dutch** came into a **rivalry** with each other over **dominance in commercial enterprises** in India. They **both were setting up** ventures in the **17th century CE** and they both wanted **competitive advantage**. This rivalry reached a peak in 1623 when the Dutch killed some Englishmen. However, this **rivalry ended in 1667** when it was decided that the **British would leave** all trade between Europe and **Indonesia to the Dutch**, while the **Dutch would leave** all commerce with **India to the British**. So, this statement is **incorrect** as the **resolution of the Anglo-Dutch rivalry did not result in the complete end of Dutch commercial ventures in the East or Asia**. **Indonesia** remained in their control, from where they carried on the extremely profitable **trade of spices, especially pepper**.

**Statement 3 is correct:** After the Portuguese, the **British** were the **greatest naval power**, both in **Europe and in India**. This helped them to **monopolise trade routes** between Europe and India and thus **increase their share** in the commerce with India. This was one of the **reasons** that the **British East India Company** managed to **defeat and establish superiority** over the French East India Company.

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-3, Pg-34, 49, 30

Q.27)

Ans) a

Exp) Option a is the correct answer.

Roughly every 10 years the British would introduce constitutional legislation - i.e. reforms to the structure of the Legislature and Executive in British India in order to pacify the growing demands of the nationalists for increasing the share of Indians in the governance of the country. Morley Minto Reforms (Indian Councils Act) 1909, Montagu Chelmsford Reforms (Government of India Act) 1919, Government of India Act 1935 and the Indian Independence Act 1947 were all such legislations.

**Statement 1 is correct:** The concept of **separate electorate** was **first introduced** in India in the **Morley Minto Reforms (Indian Councils Act) of 1909**. At that time, they were **provided only to Muslims**. However, seeing how it was a **good idea to create division** among Indians, the Britishers **kept** using it and even **expanded it** in subsequent important constitutional legislations. In the **Government of India Act of 1919** the **separate electorates** were **extended** to the **Sikhs, Christians and Anglo Indians** besides the Muslims. The **Government of India Act, 1935** tried to **extend** this to the **Depressed Classes** as well, but the **nationalists** sensed their intentions and **prevented** this by working out a formula for representation by reservation of seats amongst themselves.

**Statement 2 is correct:** Although **Indians** had already been a part of the Governor General's Legislative Council **before 1909**, they were **nominated** and not elected. However, the **Morley Minto Reforms of 1909** made the **provision of election** of some members to the **Central Legislative Council** for the **first time in India**. However, it must be noted that the **elections were indirect** and the elected members were still a **minority**.

**Statement 3 is correct:** The **Montagu Chelmsford Reforms of 1919** **introduced in India** for the **first time** - the concept of **Bicameralism**. The Indian Legislative Council at the Centre was replaced by the **Council of State** (Upper House) and a **Legislative Assembly** (Lower House).

Each of these Houses was to have a **majority of elected representatives**. So **Direct/ Popular Elections** were **introduced** for the first time in India as well. Although it must be noted that the rules **restricted the franchise** a great deal.

**Statement 4 is incorrect:** The **Montagu Chelmsford Reforms of 1919** (and **not the Indian Independence Act, 1947**) **introduced a responsible government** for the **first time in India**.

The Montagu Chelmsford reforms introduced **Dyarchy** at the **Provincial Level**, wherein the Provincial Governments were to be **run by directly elected popular governments** that were **responsible** to the **people's representatives** in the **Provincial Legislative Assembly** in matters of **Transferred subjects**, as in a proper democracy.

A proper **fully responsible government** was **introduced** by the **Government of India Act, 1935** as distinctions between Transferred and reserved subjects were ended in Provinces and the **Provinces** were **given full autonomy**.

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-26, Pg -550 to 553

Q.28)

Ans) c

Exp) Option c is the correct answer.

The Calcutta Group of artists came into **existence in 1943** as a response to the **famine in Bengal** that killed thousands of people in the countryside and provoked scenes that shook the conscience of the state. For the first time in modern Indian art, artists began to **paint images** that evoked anguish and trauma and reflected the urban situation. The formal treatment of the paintings began to reflect the **influence of European modernism**. This group of artists expressed the need for a **visual language** that could reflect the crisis of urban society.

Other contributory factors were the **effects of World War II**, felt in the form of high prices, heightened political activity (Gandhi's Quit India call) and frantic troop movements. A group of young artists decided to reject the lyricism and the romanticism seen in the work of earlier Bengali artists.

The founder members were sculptors **Pradosh Dasgupta**, his wife Kamala, painters Gopal Ghosh, Nirode Majumdar, Paritosh Sen and Subho Tagore. Others like Pran Krishna Pal, Govardhan Ash and Bansi Chandragupta joined later.

Source: <http://ngmaindia.gov.in/sh-pag.asp>

Q.29)

Ans) c

Exp) Option c is the correct answer.

Trade was an important economic activity in Ancient India, and a great contributor and marker of urbanisation. Ancient Guilds, called Srenis played an important part in consolidating growth of professions, crafts and trade on an economic level and creation of concept of Jati on a social level.

**Statement a is correct:** A Sreni in ancient India was an **association**, loosely termed as a **guild of craftsmen and traders**. Each craft and each category of trader/ merchant had their own guild. For example a Sreni of cobblers, Sreni of weavers, Sreni of builders, Sreni of local merchants, A Sreni of long distance traders, etc.

**Statement b is correct:** The **members** of a Sreni generally **lived and worked** according to the **rules** of their **respective guilds (Sreni Dharma)**. The **king** generally **provided protection** to the Sreni and **respected their customs and laws**. Most **aspects of daily life** and **resolution of petty disputes** was conducted in **accordance** with these **laws and customs**. This is different from a modern State, where there are secular civil and criminal laws which are uniform for all citizens.

**Statement c is incorrect:** The Srenis had **many functions**, **primary** of which was the **harmonising of production** and **making trading efficient** by ensuring **availability of raw materials**, transportation and **markets**. Some other functions included:

- 1) **Hearing petty matters** and making **judgements** according to their guild laws
- 2) Providing **banking services**
- 3) Making **religious donations** to Sanghas, temples, etc.
- 4) Creating **working arrangements**, deciding on aspects of daily life like **religious observances**, etc.

**Statement d is correct:** The **guilds** were **pretty powerful** and an important socio-economic agent. They had their **own seals** (like those found from Gupta times), struck their **own coins** (like those with the **legends** like *nigama*) and **insignia** which established their **identity in important transactions** and on acts of **religious donations**, etc.

Source: [https://www.infinityfoundation.com/mandala/h\\_es/h\\_es\\_shah\\_m\\_sreni\\_frameset.htm](https://www.infinityfoundation.com/mandala/h_es/h_es_shah_m_sreni_frameset.htm)  
IGNOU BA History EHI 02 - Block 8, Unit 33, Pg 21

Q.30)

Ans) b

Exp) Option b is the correct answer.

**Option a is incorrect:** Ajatasatru was **not known** for his **matrimonial alliances**. Although he too belonged to the **Haryanka dynasty** and ruled over **Magadha**. He too was a **generous patron** of the **Buddhist Sangha**.

**Option b is correct:** Bimbisara (546-494 BCE) was one of the most prominent rulers of the **Haryanka dynasty**. Under his reign **Magadha** started **rising** as one of the most important kingdoms in India. He is famous for his policy of **expansion by war (Anga)** and by **matrimonial alliances** (with the daughter of the King of **Kosala**, Chellana - the **Lichchavi** princess and the princess of **Madra** kingdom). Both Jain and Buddhist sources claim him to be a **contemporary of Mahavira and Buddha**. He was known to have made donations to Buddhist Sangha.

**Option c is incorrect:** Mahapadma Nanda belonged to the **Nanda dynasty**, not the Haryanka dynasty. Although he too ruled over **Magadha**. He was **not known** for any **matrimonial alliances**, nor was he a contemporary of Buddha or Mahavira.

**Option d is incorrect:** Bindusara belonged to the **Mauryan (Not Haryanka) dynasty**. He too ruled over **Magadha**. But he was not a contemporary of Budhha and Mahavira. He was a patron and **supporter** of the **Ajivika** sect.

Knowledge Base:

- 1) His capital was at Rajgir. One of his successors moved it to Patliputra.
- 2) He was killed by his son Ajatsatru who wanted to sit on the throne.
- 3) Jivaka was a physician at his royal court.

Source: TN SCERT Class 11th History, Ch-5, Pg 49-51

Old NCERT Class 11th Ancient India, Ch-10, Pg-71

Q.31)

Ans) d

Exp) Option d is the correct answer.

**Statement a is correct:** In Indian art, **Yakshas** have been portrayed as **fearsome looking warriors** with **stout bodies** and **protruding bellies**, as well as **dwarf-like short stature**.

**Statement b is correct:** The cult of Yaksha/ Yakshi is very ancient in India. **Earlier** they were depicted as **benevolent nature-spirits** who would **grant wishes**, as they were **guardians of wealth (Yakshas)** and earth's **natural resources** like **grain, agriculture, fertility, water, fruits, etc (Yakshis)**. However **later**, in some didactic tales, they have also been depicted as **evil spirits** which **test humans, especially lonely travellers** and **scare** them and **devour** them.

**Statement c is correct:** The **cult** of Yaksha/ Yakshi worship is **ancient and pan-India**. While they have an **ambivalent** personality in **North India** (sometimes good, sometimes evil), they have mostly been portrayed as **evil spirits** preying on innocent humans in **South India**.

**Statement d is incorrect:** The cult of Yaksha/Yakshi is **related to all the three religions of Hinduism, Jainism and Buddhism**.

In **Hinduism**, they denote the **minions** of god of wealth, **Kubera**, who as **nature-spirits, protect** the **natural resources of earth**.

In **Buddhism**, **Yakshis** are said to be the **attendants of the Vaisaravana** (12 heavenly generals who protect Bhaisajyaguru - the Medicine Buddha) - popular in Thai form of Buddhism.

In **Jainism**, the **Yakshis** are said to be **attendants of each Tirthankara**, and hence 24 of them have been identified. For example, Yakshi Ambika is said to be the attendant of Tirthankara Neminath.

Knowledge Base:

- 1) The cult of Yaksha/ Yakshi worship in India is so ancient that its exact roots and beginning can't be exactly pinned down. However, it can be said that their worship was a part of mainstream religion upto Mauryan period (300BCE- 200 BCE), after which it declined and
- 2) merged into mainstream religions like Hinduism, etc.
- 3) Yakshis have been depicted as sensuous and beautiful young women with broad, curvaceous
- 4) and fleshy bodies.
- 5) The most famous sculpture of this category is a polished sandstone sculpture of a fly-whisk
- 6) bearing Yakshi in Didarganj, Bihar, belonging to the Mauryan Era.

Source: <https://www.britannica.com/topic/yaksha>

<https://deccanviews.wordpress.com/2017/01/26/yaksha-yakshi-depictions-benevolent-spirits/>

<https://www.livehistoryindia.com/story/snapshort-histories/yakshis-the-silent-guardians/>  
11th NCERT Fine Arts, Ch-3, pg-25

Q.32)

Ans) a

Exp) Option a is the correct answer.

Indian **National Congress** (founded in 1885) and **Muslim League** (founded in 1906) were two of the most important pan-India political parties representing Indian interest against the British during the freedom struggle.

**Statement 1 is correct:** Although **Muslim League** was most of the time a **reactionary element** that **supported** the **British** government in hopes of getting favourable treatment, **both** the League and Congress believed that **Indians** should have a **greater role in the governance process** of their country. This is one of the points that brought them together during the **Lucknow Pact of 1916**. They demanded that **legislatures** at both **central and provincial levels** be **expanded** and more elected candidates be given seats.

**Statement 2 is incorrect:** **Separate Electorates** were **introduced** by the **Morley Minto Reforms (Indian Councils Act 1909)**. While this was **welcomed** by the **League**, the **Congress** vociferously **opposed it**. Congress maintained that it was the **representative of both Hindus and Muslims** and that these two religions were not two different nations whose interests can never align. They believed that such acts would **widen the communal rift** and **create alienation** among Muslims and Hindus.

It was **much later in 1916**, that the **Congress finally accepted** the principle of separate electorates with a heavy heart, in order to reach an **important understanding** with the League at Lucknow Pact, as it was important to put a **united front** against the British.

**Knowledge Base:**

- 1) Both believed in demanding self-government from the British
- 2) The League believed in communal ideologies like separate electorates and 2 nation theory, but the Congress did not

**Q.33)**

**Ans) b**

**Exp) Option b is the correct answer.**

The late 1890s and the early 1900s saw a flurry of militant activities. The Chapekar brothers, Prafulla Chaki & Khudiram Bose's attempts at the life of British functionaries, secret groups like Anushilan Samiti, Ghadr, etc were a testament to the decreasing patience of the young Indian nationalists with British policies.

**Statement a is incorrect:** The Montagu–Chelmsford Reforms or Mont–Ford Reforms, were introduced by the colonial government to introduce **self-governing institutions** gradually in British India. Reforms led to the enactment of the Government of India Act of 1919. This instilled a **sense of nationalism** and awakening among Indians and they moved towards achieving the goal of Swaraj. Thus these reforms **did not influence militant nationalism** during 1905–1909.

**Statement b is correct:** As people with **modern education** increased in India, their **awareness** regarding **progressive political ideas** such as **rule of law, right to self-determination**, etc increased. They also became aware of how **Britain was draining India** of its **resources** in a unilateral way and causing de-industrialisation leading to **poverty**. Most of this youth which was well educated wanted good **employment and business opportunities**, but were **denied these** because of Britain's exploitative administrative and economic policies like excluding Indians from higher civil services, not letting Indian industries grow, etc. Thus, it was one of the factors for the rise of militant nationalism during 1905–1909.

**Statement c is incorrect:** Events like the **Russian Revolution** did inspire a new wave of **militant nationalism**, but that was in the **1920s and 1930s** as the **Russian revolution** took place in 1917. As far as growth of **militant nationalism** in early **1900s** is concerned, it was influenced by **international events** which proved that the belief of **European superiority and invincibility** was a **myth**

- 1) Victory of the Abyssinians against Italy (1896)
- 2) Boer Wars where the British were crippled (1899–1902)
- 3) Japan's victory over Russia (1905)

**Statement d is incorrect:** Growth in **socialistic ideologies** was responsible for the **wave of militant nationalism** in **1920s and 1930s**. Socialistic ideologies grew because of **worker exploitation**. But that came **after Indian industries** saw a **boom after World War One**. So for the early 1900s, socialistic ideologies were not an issue. The exploitation and general disrespect for Indians was one of the main driving forces behind this wave of militant nationalism.

**Knowledge Base:** Other reasons:

- 1) Dissatisfaction with achievements of moderates
- 2) Reactionary policies of Curzon like Official Secrets Act, etc
- 3) Reaction to Increasing Westernisation
- 4) Growth of confidence and self-respect among Indians

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-12, Pg-280 to 283

**Q.34)**

**Ans) c**

**Exp) Option c is the correct answer.**

The Civil Disobedience Movement (CDM) of 1930–34 was the second pan-India mass movement against British rule under the leadership of Gandhi. It was centred around the active breaking of laws that were considered unjust – like the salt tax and courting arrest to protest exploitative laws and to demand Purna Swaraj – independence from British rule.

**Statement a is incorrect:** Unlike the Non-Cooperation Movement (NCM), the CDM, was largely peaceful and there was no burning or destroying of government property.

**Statement b is incorrect:** The response of Indians to the CDM was more divided than it had been to NCM. Many factions like small businesses, forest tribes, peasants did participate, but many factions like some Muslims, big Industrialists, etc did not participate. The whole episode of Communal Award in 1932 in the middle of the movement also created temporary rifts between Dalit leaders and other nationalist leaders. So CDM did not provide a great unifying effect on Indian masses.

**Statement c is correct:** The government suffered a sizeable amount of loss in its income from excise revenues as people boycotted liquor, foreign cloth, and refused to pay land revenue and other taxes like Chowkidari tax, etc

**Statement d is incorrect:** The British made increased attempts to bring all important Indian political parties representing various strands of Indian interests on a common platform to discuss future constitutional developments in India. While the British didn't care much for Congress participation in the 1st Round Table Conference (RTC), they did go out of the way to ensure that an important stakeholder like Congress was present in the 2nd RTC.

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-19, Pg-409

Q.35)

Ans) b

Exp) Option b is the correct answer.

**Statement a is incorrect:** While Gandhi believed that the means (way) adopted for achieving a goal is as important as the goal to be achieved, Bose took a more machiavellian approach. He believed that if the goal is noble and going to provide relief to many, then any path may be taken to achieve it, even if the actions on that path do not strictly pass all tests of morality. For example, Bose had no qualms in taking help of the Nazis (who were evil and inhumane) if that meant weakening the British who were denying India its independence. This is in contrast to Gandhi, who halted a full national mass movement like the Non-Cooperation Movement because there had been the violent Chauri Chaura incident which he believed to be immoral.

**Statement b is correct:** Both Gandhi and Bose did not believe that Parliamentary Democracy was the best fit for India's future form of government. Gandhi believed that this system would take the leaders away from the masses and make them greedy and deaf to the real needs of the people. He believed that a decentralised government rooted in local self-governance where people were more involved was the correct way to govern the country.

Bose too did not think that Parliamentary Democracy would be a wise choice for India's form of government in the near future. Given the large number of illiterate people in the country with no understanding of the democratic process and its ramifications, the country needed to be governed according to the decisions taken by an enlightened leadership, as often seen in communist nations like the USSR, at least till people become literate enough to take good decisions for the country.

**Statement c is incorrect:** Gandhi believed that religion was an inseparable part of the lives of Indians and often drew on religious examples to motivate people in the freedom struggle. On the other hand, Bose, while respecting all religions, did not believe that religion had a place in public life and believed that it was important that India be a secular state post-independence where Church & State remain separated.

**Statement d is incorrect:** Gandhi was a proponent of self-sufficient village economy based on manual work and cottage industries. He opposed centralisation of the economy as well as automation and industrialisation.

On the other hand, Bose admired the achievements of the USSR, and believed that having an industrial, planned, centralised economy was the only way to ensure that India catches up with the rest of the world and becomes a wealthy nation, thus eradicating poverty.

Source: Brief History of Modern India by Spectrum, 27th Edition, Ch-22, Pg-457 to 465

<https://indianexpress.com/article/opinion/columns/indian-democracy-mahatma-gandhi-teachings-indian-parliament-5560286/>

Q.36)

Ans) d

Exp) Option d is the correct answer.

The Indus Valley Civilisation (IVC) also known as the Harappan civilisation was the oldest civilisation of South Asia, that flourished between 3rd millennium BCE and 2nd millennium BCE. It reached its zenith (mature phase) during the period between 2600-1900 BCE.

**Statement 1 is correct:** Unlike the Vedic civilization which placed more stress on male deities, and preferred male progeny, the Harappans worshipped the fertility of women as a divine phenomenon. Various terracotta figurines of women with ceremonial headgear, naked torso with protruding bellies and wide hips suggest this. While this does not confirm that women had a higher or equal status compared to the males in the IVC society, it does indicate that worship of the divine feminine was more prevalent in the IVC compared to its successor - the Vedic civilization.

**Statement 2 is correct:** People of IVC have knowledge of primaevial form of chausar like game. Unlike the proto-historic societies seen in the Indian subcontinent until now, which knew only of singing and dancing as leisure activities, the Harappans knew about toys and games as well. Many terracotta figurines shaped variously as animals (bull, dog, bird etc) as well as dice (suggesting a primaevial form of chausar like game) prove that the Harappans had varied leisure activities and lived much more advanced and sedentary lives than the civilisations before.

**Statement 3 is correct:** Both men and women grew their hair long in the IVC and tied them in various hairstyles, such as a top knot or a low bun at the back of head. Also, both men and women wore ornaments in the IVC. The ornaments like bangles, necklaces and amulets were worn by both men and women. However, some ornaments like multi-strand necklaces, waist bands and hip girdles, etc were worn only by the women.

Source: Ancient Indian History by Upinder Singh, 7th Edition, Ch-4, Pg 174

Q.37)

Ans) a

Exp) Option a is the correct answer.

Recently, Hollywood actor Bruce Willis has retired after being diagnosed with a medical condition called aphasia Brain Disorder.

**Brain Disorder Aphasia** is a disorder that results from damage to portions of the brain that are responsible for language. For most people, these areas are on the left side of the brain. Aphasia usually occurs suddenly, often following a stroke or head injury, but it may also develop slowly, as the result of a brain tumor or a progressive neurological disease. The disorder impairs the expression and understanding of language as well as reading and writing. Aphasia may co-occur with speech disorders, such as dysarthria or apraxia of speech, which also result from brain damage.

**Option b is incorrect:** Alzheimer's disease (AD) is the most common and fastest growing form dementia in the aging population that accounts for more than 60 percent of all dementia-related diseases. Irreversible and progressive, AD slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks of daily living. Although treatment can help manage the symptoms of AD, there is no cure for the disease.

**Option c is incorrect:** Primary brain tumors, in which the cancer originates in the brain, account for 50 percent of brain tumors. Secondary or metastatic brain cancer, in which cancerous cells have spread to the brain from a tumor located elsewhere in the body, accounts for the other cases. Twenty to thirty percent of patients with metastatic cancer—cancer that spreads from its origin—develop secondary brain cancer.

**Option d is incorrect:** Parkinson's disease (PD) is a brain disorder that leads to shaking (tremors) and difficulty with walking, movement, and coordination. PD encompasses a variety of syndromes, all of which are progressive and degenerative.

Source: Bruce Willis diagnosed with aphasia, what is it? (indianexpress.com)

What Is Aphasia? – Types, Causes and Treatment (nih.gov)

Bruce Willis: What is aphasia? The brain disorder that's making Bruce Willis quit acting has affected more than 16L Indians so far - The Economic Times (indiatimes.com)

## Parkinson's and Other Movement Disorders - SNMMI

Q.38)

Ans) b

Exp) Option b is the correct answer.

Quantum Technology is the name given to a host of technology using the rules of Quantum Mechanics. It deals with subatomic particles that have dual behaviour as both a particle and wave/ energy. This creates possibilities that have not existed using classical physics, giving rise to many new applications. India in its Budget 2020, announced a National Mission worth 8000 Cr Rs to further development of Quantum Technologies.

**Option 1 is incorrect:** Since **black holes absorb light**, it has so far **not been possible** to capture a **direct image** of a black hole using traditional optics. **Quantum technology** can provide **increased computing power** to run **programs** like the one that recently **used reflected light** from a huge region around a blackhole to create a **digital picture** of it. But **QT cannot be used to capture direct images** of black holes as yet.

**Option 2 is correct:** The most popular usage of QT has been the creation of **Quantum satellites** that use principles like **Quantum Entanglement** to ensure that **communication** over a **network** is **never compromised** and there is **no hacking**. As soon as a 3rd party will **intercept** the signal to hear it or change it, the **spin** of the **subatomic particle** constituting the signal **goes out of phase** and a **breach is detected**. This property is used, by countries like China to **protect** its **critical infra like power grids** from **cyber-attacks**.

**Option 3 is correct:** QT has been used to create **Quantum Supercomputers** whose **computing capabilities** are **exponentially higher** than that of a **conventional supercomputer**. Since a Quantum Supercomputer uses **Q-bits**, which exist in **multiple fractional states between 0 and 1**, it acts like **multiple supercomputers in parallel**. This increased computing power can be used to run highly **accurate weather models and disaster prediction models** which characteristically have a **high amount of data** and **need a lot of computing power**. This can help better prepare for disasters and save lives and property.

**Option 4 is correct:** **Medical Research** requires **heavy computation** running various tests and various permutations and combinations. For example, finding the **right vaccines** quickly using **huge volumes of trial data; complete sequence of human genome** (very data intensive), discovering **new molecules** and proteins to treat hitherto incurable diseases like Alzheimer's, HIV, cancer, etc.

**Option 5 is incorrect:** Creation of **artificial organs** for **transplants** uses technologies like **Additive Manufacturing**, also popularly known as **3D printing** and not Quantum Technologies.

Source: <https://www.psa.gov.in/technology-frontiers/quantum-technologies/346>

[https://www.scmp.com/news/china/science/article/3159234/china-uses-quantum-satellite-protect-worlds-largest-power-grid?module=perpetual\\_scroll\\_1&pgtype=article&campaign=3159234T](https://www.scmp.com/news/china/science/article/3159234/china-uses-quantum-satellite-protect-worlds-largest-power-grid?module=perpetual_scroll_1&pgtype=article&campaign=3159234T)

Q.39)

Ans) c

Exp) Option c is the correct answer.

Blockchain is a new type of tamperproof data structure that is being increasingly used to store data regarding transactions. Recently a National Strategy on Blockchain has been formulated by the government.

**Statement 1 is correct:** Unlike traditional data structures like arrays, pointers, etc, a Blockchain is a **peer-based ledger** which is **shared** amongst users. There is **no one authority** controlling it. It is available to anyone who wants to test the veracity of the transactions, or to anyone who wants to add a new transaction.

**Statement 2 is correct:** As soon as a **transaction is stored** it becomes **immutable or unchangeable**, as **permission** from **all the computers/ nodes** in a network is **required to authorise any transaction** on the blockchain, including creating changes. **Changing the code linking the blocks disconnects** them from the blockchain thus **alerting** them to the **breach**. Thus, a blockchain ledger is immutable and transfer-proof as no hacker can enter and change data discreetly without anyone noticing.

**Statement 3 is incorrect:** There is **no one authority controlling** the blockchain. Since it is **shared** and **operations** on it require the **consensus** of all the nodes on a network, **blockchain ledgers** are said to be **decentralised**. Every **node has equal authority**, and no one node has extra powers with respect to the blockchain.

**Statement 4 is correct:** Storing **digital currencies** like cryptocurrency is **one of the many uses** of the blockchain technology. The individual blocks in a blockchain are essentially like empty vessels and can be used to **store data** related to **any sort of transaction** - like **contracts, real estate, sale of assets like property**, information related to **supply chain**, etc

**Knowledge Base:**

- 1) It helps exchange information in a faster and more secure way
- 2) Duplication and redundancies are eliminated driving up efficiencies.
- 3) Each block of data is connected to the transaction before and after it, creating a chain of data
- 4) It may be public, private or restricted access.

Source: <https://www.ibm.com/topics/what-is-blockchain>

<https://www.thehindubusinessline.com/opinion/columns/slate/all-you-wanted-to-know-about-blockchain/article28749856.ece>

<https://www.fool.com/investing/stock-market/market-sectors/financials/blockchain-stocks/blockchain-applications/>

**Q.40)**

**Ans) a**

**Exp) Option a is the correct answer.**

Edge Computing is a distributed computing paradigm that intends to **bridge the gap between data storage location and site of information** analysis in a network. With an increase in Internet of Things (IoT) devices and 5G networks the amount of data and computing power required is fast exceeding the scale and solutions provided by Cloud Computing. So, Edge Computing is being considered as the future of data analytics and Cloud Computing.

**Statement 1 is correct:** In Edge Computing **all operations** on data like analysis, processing, etc takes place on **servers and devices located near the device which produces** or is supposed to consume the **data**.

This means unlike in cloud computing where data from any device is first sent over networks to a central data centre holding the servers, then processed and returned, in Edge Computing the **local device's computation power is harnessed** to process data locally and return it **without sending** it to the **central data centres**.

**Statement 2 is correct:** By processing data at a network's edge, edge computing **reduces the need for large amounts of data to travel among servers**, the cloud and devices or edge locations to get processed. This is particularly important for modern applications such as data science and AI.

**Statement 3 is incorrect:** Since **data does not have to be sent** over **long distances** to a **central data centre** containing servers for computations, the **latency (time lag) is greatly reduced**.

Source: <https://indianexpress.com/article/explained/from-the-cloud-computing-moves-to-the-edge-6093733/>

<https://blogs.nvidia.com/blog/2022/01/05/difference-between-cloud-and-edge-computing/#:~:text=containerized%20cloud%20solutions>

<https://www.ibm.com/in-en/cloud/what-is-edge-computing#:~:text=latency%20is%20significantly%20reduced>

**Q.41)**

**Ans) a**

**Exp) Option a is the correct answer.**

**Statement 1 is correct.** Reverse Osmosis (RO) filters out **calcium, zinc, magnesium**, which are essential salts needed by the body. Most mineral constituents of water are physically larger than water molecules and they are trapped by the semi-permeable membrane and removed from drinking water when filtered through a RO.

**Statement 2 is correct.** RO was originally a technology devised to desalinate sea water. It uses “**activated carbon**” components, such as charcoal and carbon black to filter out contaminants as well as organic substances such as bacteria. To create external pressure, RO relies on a pump and electric motors. It uses “activated carbon” components, such as charcoal and carbon black that can **filter out contaminants** as well as organic substances such as bacteria.

**Statement 3 is incorrect.** The government has **banned the installation of RO** in areas where water meets drinking water norms. The government was acting on a National Green Tribunal order. The order asked to prohibit use of RO purifiers where total dissolved solids in water are **below 500 milligrams** per litre. However recently Supreme Court stays NGT ban on water purifiers where TDS is below 500 mg per litre.

**Statement 4 is incorrect.** RO filter out contaminants as well as organic substances such as bacteria. Reverse Osmosis Systems have a **very high effectiveness in removing bacteria** (for example, Campylobacter, Salmonella, Shigella, E. coli).

Source: <https://www.iwapublishing.com/news/reverse-osmosis-and-removal-minerals-drinking-water#:~:text=Most%20mineral%20constituents%20of%20water%20are%20physically%20larger%20than%20water%20molecules%20and%20they%20are%20trapped%20by%20the%20semi%2Dpermeable%20membrane%20and%20removed%20from%20drinking%20water%20when%20filtered%20through%20a%20RO>

<http://www.zuccess.in/uploads/news/FEBRUARY-2020/1581218155983.pdf>

[https://www.business-standard.com/article/current-affairs/sc-stays-ngt-ban-on-water-purifiers-where-tds-below-500-mg-per-litre-122030100625\\_1.html](https://www.business-standard.com/article/current-affairs/sc-stays-ngt-ban-on-water-purifiers-where-tds-below-500-mg-per-litre-122030100625_1.html)

Q.42)

Ans) d

Exp) Option d is the correct answer.

**Assisted Reproductive Technology** refers to treatments that manipulate the sperm or the egg to make pregnancy more likely. ART works best in couples who have an issue with sperm or who have a diagnosis that makes it difficult for the sperm to fertilize the egg.

**Pair 1 is correctly matched:** During IVF, mature **eggs are collected** (retrieved) from ovaries and **fertilized by sperm in a lab**. The fertilized egg grows in a petri dish for several days until it becomes an embryo. Then a doctor implants the embryo back into the woman's uterus.

**Pair 2 is correctly matched:** Intrauterine insemination **fertilizes the egg inside a woman's uterus**. This is a more affordable option than IVF, though it has a lower success rate. An **intrafallopian transfer technology** fertilizes the egg inside the woman's fallopian tube.

**Pair 3 is correctly matched:** **Intracytoplasmic sperm injection (ISI)** removes one or more eggs from the woman's body. Then a **mature egg is injected with a single healthy sperm**. When the eggs develop normally, they are transferred back to the woman's body. ISI works best when there are serious sperm issues.

**Knowledge Base:** Recently, Lok Sabha has passed the **Assisted Reproductive Technology (Regulation) Bill, 2021**. The ART Regulation Bill aims to regulate and supervise assisted reproductive technology clinics and banks, prevent misuse of the technology and promote the ethical practice of the services.

**Salient features of the ART (Regulation) Bill, 2021**

- 1) **Definition of ART:** Under the Bill, ART will include all techniques that attempt to obtain a pregnancy by handling the sperm or the oocyte (immature egg cell) outside the human body, and transferring the gamete or the embryo into the reproductive system of a woman.
- 2) **Setting up of ART Banks:** The Bill defines an ART bank as an organisation set up to supply sperm or semen, oocytes, or oocyte donors to ART clinics or their patients.
- 3) **Regulation of ART Clinics:** The Bill provides for the establishment of the National Registry of Clinics and Banks, which will act as a central database for details of all the clinics and banks in the country.
- 4) **National and State Boards:** The Bill also provides for the establishment of National and State Boards for Surrogacy for the regulation of ART services.
- 5) **Rights of a Child Born through ART:** The Bill provides that the child born through assisted reproductive technology shall be deemed to be a biological child of the commissioning couple and the said child shall be entitled to all the rights and privileges available to a natural child only from the commissioning couple under any law for the time being in force.

- 6) **Pre-implant testing:** The Bill mandates that pre-implantation genetic testing shall be used to screen the embryo for known, pre-existing, heritable, or genetic diseases.
- 7) **Offences:** Offences under the bill include clinics offering sex selection, abandoning or exploiting children born through ART, the selling, buying, or importing of human embryos and exploiting the couple or donors concerned in any form.

Source: Different Types of Assisted Reproductive Technology (ART) - Center of Reproductive Medicine (infertilitytexas.com)

Assisted Reproductive Technology (Regulation) Bill - Explained, pointwise-ForumIAS Blog

Q.43)

Ans) b

Exp) Option b is the correct answer.

**Option b is correct:** Project NETRA stands for Network for Space Object Tracking and Analysis. It is an initiative of the **Indian Space Research Organisation (ISRO)**. It is an early warning system in space to **detect space debris and safeguard India's functional satellites in low-earth orbits**. Under NETRA, ISRO plans to put up many observational facilities such as space debris tracking radar with range of 1,500 km (capable of detecting and tracking objects 10 cm and above in size), optical telescopes (effective surveillance and tracking network) and data processing units.

Source: <https://blog.forumias.com/project-netra-isro-to-step-up-tracking-of-space-debris/>

Q.44)

Ans) c

Exp) Option c is the correct answer.

Micro plastics are tiny plastic particles less than five millimeters long that result from both commercial product development and the breakdown of larger plastics.

**Statement 1 is incorrect:** There is **no evidence to suggest that micro plastics can permanently reside in a human body**. Although, researches have shown that they can cause cell death and allergic reactions in humans. However, the precise health impact to the human body is uncertain because it is not known how long micro plastics remain in the body before being excreted. So, it may permanently reside in the human body but it cannot be said for sure which makes the statement incorrect.

**Statement 2 is correct:** A recent study found that micro plastics can latch on to the outer membranes of red blood cells and may **limit their ability to transport oxygen**. The particles have also been found in the placentas of pregnant women, and in pregnant rats they pass rapidly through the lungs into the hearts, brains and other organs of the foetuses.

**Statement 3 is correct:** Micro plastics might act as irritants, in much the same way asbestos fibers are now known to inflame the lungs and cause cancer. Research has shown the potentiality for **metabolic disturbance, neurotoxicity as well as carcinogenic effects**. It can act as **endocrine disruptors**, thus **interfering with normal hormone function** and potentially causing weight gain. Micro plastics are also thought to act as **vectors for microorganisms** and toxic chemicals.

Source: <https://www.theguardian.com/environment/2022/mar/24/microplastics-found-in-human-blood-for-first-time>

<https://www.news-medical.net/health/How-do-Microplastics-Affect-Our-Health.aspx>

<https://www.theguardian.com/environment/2021/dec/08/microplastics-damage-human-cells-study-plastic#:~:text=Microplastics%20cause%20damage%20to%20human%20cells%20in%20the%20laboratory%20at,levels%20relevant%20to%20human%20exposure.>

<https://www.thehindu.com/sci-tech/science/detecting-microplastics-in-human-blood/article65267369.ece>

Q.45)

Ans) b

Exp) Option b is the correct answer.

Corbevax is an indigenously produced COVID-19 vaccine candidate developed by the Indian pharmaceutical firm Biological E. Limited (BioE).

**Statement 1 is correct:** Corbevax is India's first **indigenously developed Receptor Binding Domain (RBD) protein subunit vaccine**. It is a protein subunit vaccine, which means that instead of the whole virus, it **uses fragments of it to trigger an immune response**.

**Statement 2 is incorrect:** A subunit vaccine is one that only **uses the very specific parts** (the subunits) of a virus or bacterium that the immune system needs to recognize. It doesn't contain the whole microbe or uses a safe virus as a vector. The subunits may be proteins or sugars. On the other hand, **Inactivated vaccines**, which include killed particles of the whole SARS-CoV-2 virus, **attempt to target the entire structure of the virus**. On the other hand, Corbevax, like the mRNA and viral vector Covid-19 vaccines, targets only the spike protein, but in a different way.

**Statement 3 is correct:** Recently it was decided by government that Corbevax vaccine to be **administered to the 12-14 years age group**. Corbevax had received the emergency use authorization (EUA) from the Drugs Controller General of India (DCGI) in February 2022 for children in the age group of 12 to 18 years.

Source: <https://blog.forumias.com/department-of-biotechnology-mission-covid-suraksha-supported-biological-e-limited-novel-covid-19-vaccine-candidate-corbevaxtm-receives-dcgi-approval-for-emergency-use-authorization/>  
<https://indianexpress.com/article/explained/corbevax-vaccine-biological-e-india-7344928/>  
<https://blog.forumias.com/dcgi-approves-clinical-trials-of-biological-e-covid-19-vaccine-corbevax/>

Q.46)

Ans) b

**Exp) Option b is the correct answer.**

Additive Manufacturing (AM) is defined as the technology that constructs a three-dimensional object from a digital 3D model or a CAD model by adding material layer by layer.

**Statement a is correct:** The National Strategy on Additive Manufacturing Policy aims to position India as a **global hub** for additive manufacturing development and deployment. It also seeks to create and **protect the integrity of India's AM intellectual properties**. It will also create a conducive ecosystem for Global AM leaders to set up their operations in India.

**Statement b is incorrect:** The Strategy for Additive Manufacturing Policy aims to **achieve 5% (and not 50%)** of Global additive manufacturing market share. The policy has also set the target to develop 50 India specific technologies, 100 new start-ups, 500 products, 10 existing & new manufacturing sectors & 1 Lakh new skilled manpower in Additive Manufacturing (AM) sector by 2025.

**Statement c is correct:** With the release of the Strategy, innovation and Research and Development ecosystem will be **encouraged in PPP mode** to transform the existing research knowledgebase to develop Additive Manufacturing grade materials, 3D printer machines and **printed indigenous products** for the vast domestic and international market in various sectors including electronics, photonics, medical device, agro and food processing etc.

**Statement d is correct:** In its national strategy, MeitY has suggested the sectors to get ahead in the additive manufacturing or 3D printing space. It recommended the adoption of additive manufacturing **in all sectors in India, including in defence and public sectors**. An apex body which has subject matter experts and leaders from local and global industries could be established to lead the mission.

Source: <https://indianexpress.com/article/business/commodities/3d-manufacturing-policy-target-of-500-items-by-2025-7789876/>  
<https://blog.forumias.com/minister-of-electronics-and-it-release-national-strategy-on-additive-manufacturing/>  
<https://theprint.in/india/centre-releases-national-strategy-on-additive-manufacturing-to-boost-digital-ecosystem/846637/>

Q.47)

Ans) c

**Exp) Option c is the correct answer.**

The smallest living part of an organism is a 'cell'. Cells were first observed in cork by Robert Hooke in 1665. Animal cells are mostly round and irregular in shape while plant cells have fixed, rectangular shapes.

**Statement 1 is correct:** Both plant and animal cells have mitochondria, but only cells of plant have chloroplasts. Plants don't create their sugar from food eating, so they need to make sugar from sunlight. This process (photosynthesis) takes place in the chloroplast. In particular, chloroplasts allow plants to capture the energy of the Sun in energy-rich molecules.

**Statement 2 is incorrect:** Both plant and animal cells are eukaryotic i.e. they contain a nucleus and organelles, and are enclosed by a plasma membrane. Plant cells are unique among eukaryotic cells for several reasons. For maintenance of structural support, plants have reinforced, relatively thick cell walls that are made mostly of cellulose. Where animal cells do not have such structures (cell walls), they have only a plasma membrane. Cell walls allow plants to have rigid structures as varied as wood trunks and supple leaves.

**Statement 3 is the correct:** For storage and maintaining the shape of the cell, plant cell contains a large, singular vacuole. Vacuoles allow plant cells to change size. In contrast, animal cells have many, smaller vacuoles.

Source: <https://blog.forumias.com/plant-vs-animal-cells/#:~:text=For%20storage%20and%20maintaining%20the,cells%20of%20plant%20have%20chloroplasts.>

<https://ncert.nic.in/textbook/pdf/hesc108.pdf>

**Q.48)**

**Ans) d**

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

There are various methods to treat contaminants: some involve destroying the contaminants at site while other methods include removing them from exhaust streams before they enter the environment.

**Option 1 is correct:** Electrostatic precipitators are particulate collection devices that remove particles from a flowing gas (such as air) using the force of an induced electrostatic charge. ESPs are highly efficient filtration devices that can easily remove fine particles, such as dust and smoke, from the air stream. They have been used almost universally in power plants for removing fly ash from the gases prior to discharge

**Option 2 is correct:** Biopiles is an ex-situ bioremediation technique (treatment of contaminated material elsewhere). It is a hybrid of land farming and composting. Essentially, engineered cells are constructed as aerated composted piles. This method is typically used for treatment of surface contamination with petroleum hydrocarbons.

**Option 3 is correct:** A wet scrubber system is one type of scrubber that is used to remove harmful materials from industrial exhaust gases—known as flue gas—before they are released into the environment. It utilizes a wet substance to remove acidic gases that contribute to acid rain. **Example:** Water is used when dust and particulate matter is to be removed.

**Option 4 is correct:** Bioventing is an in-situ bioremediation technique (treatment of contaminated material at site). This method involves supply of air and nutrients through wells to contaminated soil to stimulate the growth of indigenous bacteria. It is used for simple hydrocarbons and can be used where the contamination is deep under the surface

**Option 5 is correct:** Rhizofiltration is a water remediation technique that involves the uptake of contaminants by plant roots. This method is used to reduce contamination in natural wetlands and estuary areas.

Source: <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/electrostatic-precipitator>

[https://energyeducation.ca/encyclopedia/Wet\\_scrubber](https://energyeducation.ca/encyclopedia/Wet_scrubber)

Environment, Shankar Notes, Chapter-5, Environmental Pollution, Pg. 76-77

**Q.49)**

**Ans) d**

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

Contract farming can be defined as agricultural production carried out according to an agreement between a buyer and farmers. It establishes conditions for the production and marketing of a farm product or products.

**Statement 1 is incorrect:** Under the **Ceiling on Land Holdings Act**, **non-agriculturists can't own agricultural land**. Ceiling on Land Holdings Act Acts are operational at the state level. However, these restrictions **vary from state to state**. For instance, there are **no restrictions for those wanting to invest in agricultural land in Tamil Nadu**. Similarly, **anyone can purchase agricultural land in Kerala**. Recently in 2020, the **Karnataka Cabinet decided** to amend the Karnataka Land Reforms Act that will **allow anyone to own agricultural land**. Thus, it is in **particular states only** that non-agriculturists could purchase agricultural property.

**Statement 2 is incorrect:** **Contract Farming (and not corporate farming) has been permitted** in most states as per the **model APMC Act 2003** of the Ministry of Agriculture and Farmer Welfare (MoAFW). The model Act made three new channels of farm produce buying and selling i.e., **direct purchase, contract farming and private wholesale market** legal. This was adopted by most states in a few years, and later, under the separate model Agricultural Produce and Livestock Contract Farming and Services (Promotion and Facilitation, APLCF&S (P&F)) Act, 2018.

**Statement 3 is correct:** Laws in India **restrict leasing rights for agricultural land**. Different states have different level of restriction on leasing of agricultural land, for example:

- 1) States such as Telangana, Bihar, Uttar Pradesh, Madhya Pradesh, and Karnataka ban land leasing with some exceptions to widows, disabled people, and defence personnel, among others.
- 2) Kerala prohibits leasing of the land, but recently it has started allowing self-help groups (SHGs) to lease agricultural land.
- 3) States such as Haryana, Punjab, Gujarat, Maharashtra and Assam do not ban leasing, but the leaseholder has the right to purchase the cultivated land after a certain point.
- 4) Only West Bengal, Rajasthan, Andhra Pradesh and Tamil Nadu have liberal land leasing laws.

#### **Knowledge Base:**

Corporate farming (wherein corporate agencies undertake farming operations on owned or leased land for their consumptive use or for commercial purpose) option is not available in India.

Source: <https://indianexpress.com/article/india/sukhpal-singh-interview-contract-farming-7191898/>  
<https://www.thehindu.com/features/homes-and-gardens/Land-laws-across-India/article14414630.ece>

<https://theprint.in/opinion/let-farmers-lease-land-like-people-rent-houses-land-laws-are-holding-india-back/886860/>

<https://www.deccanherald.com/state/top-karnataka-stories/karnataka-opens-up-agricultural-land-purchase-for-all-848465.html>

**Q.50)**

**Ans) a**

**Exp) Option a is the correct answer.**

The relationship between **asset price & interest rate** are **inversely related**. When interest rate is low, asset prices are high, and; when the interest rate is high, asset prices are low. Bond price have an inverse relationship to interest rates. When the cost of borrowing money rises (when interest rates rise), bond prices **usually fall**, and vice-versa.

**Bonds also are a type of asset.**

**It can be better understood with the help of this example:**

Assume that you purchase a bond priced at 100 Rs @ 10% interest rates paid annually for 2 years, meaning the bond shall pay you a payment of 10 Rs every year for 2 years. Now, suppose the interest rates go up to 15% the very next day or after a few days.

You have a friend who also purchased the bond when the interest rate was 10%. He is in need of money and offers you to buy his bond. Now, you'll not buy your friend's bond for 100 Rs. Why? because the same 100 Rs bond if bought from the open market is giving a 15% interest rate while your friend's bond is still priced at 10% only. So, you make an offer to your friend that you'll purchase his bond at 80 Rs. Though hesitant, your friend, who is in desperate need of money, accepts your offer. Hence, as you can see now, with an increase in interest rate, the bond price went down.

Source: <https://blog.forumias.com/interest-rates-and-asset-prices/>

Q.51)

Ans) c

Exp) Option c is the correct answer.

Copyright is a form of intellectual property protection granted under Indian law to the creators of original works of authorship such as literary works, dramatic, musical and artistic works, cinematographic films and sound recordings.

**Statement 1 is incorrect:** The **Registrar of Copyrights** is in-charge of implementation of Copyright Act 1957. He is the head of the Copyright Office under the **Department for Promotion of Industry and Internal Trade** of the Ministry of Commerce and Industry.

**Statement 2 is correct:** Different Classes of Work Protected under Copyright are:

- 1) "**Literary work**": Computer programmes, books, articles, poems, tables and databases.
- 2) "**Artistic work**": Paintings, a sculpture, a drawing, etc.
- 3) "**Musical work**" includes any graphical notation of such work but does not include any words or any action intended to be sung, spoken or performed with the music.
- 4) "**Sound recording**" means a recording from which sounds may be produced regardless of the medium on which such recording is made or the method by which the sounds are produced.
- 5) "**Cinematograph film**" means any work of visual recording on any medium, produced through a process from which a moving image may be produced by any means.

**Statement 3 is incorrect:** **Copyright Act, 1957** does **not cover the copyright** of an **idea**. This has also not been covered under the recent amendment.

**Statement 4 is correct:** The Copyright Act, 1957 confers copyright protection in the following two forms: **Economic rights** of the author and **Moral Rights** of the author. The **Economic rights** are mainly to reproduce the work in any material form including the storing of it in any medium by electronic means, to issue copies of the work to the public, to perform the work in public or communicating it to the public, to make any cinematograph film or sound recording in respect of the work, and to make any translation or adaptation of the work.

The Copyright Act 1957 defines the two basics '**moral rights**' of an author. These are Right of **paternity** and Right of **integrity**. The right of paternity refers to a right of an author to claim authorship of work and a right to prevent all others from claiming authorship of his work. Right of integrity empowers the author to prevent distortion, mutilation or other alterations of his work, or any other action in relation to said work, which would be prejudicial to his honour or reputation.

Knowledge Base:

Key Provisions of the Copyright (Amendment) Rules, 2021.

- 1) Amendment eliminates the requirement of publication of a copyrights journal in the Official Gazette. The said **journal** would be **available at the website** of the Copyright Office.
- 2) The copyright societies will require making an **Annual Transparency Report** public, for each financial year.
- 3) The amendments harmonised the Copyright **Rules** with the provisions of **Finance Act, 2017** whereby the Copyright Board has been **merged** with Appellate Board.
- 4) There has been a large **reduction in compliance** requirements for registration of software works.
- 5) The **time limit** for the response to an application for registration as a copyright society is now **180 days**. Now the Central government can examine the application more comprehensively.

India is also a signatory to the following international Intellectual Property agreements:

Paris Convention – patent or trade mark.

Berne Convention –copyright.

Madrid Protocol – trade mark.

Patent Cooperation Treaty – this is a central system for obtaining a 'bundle' of national patent applications in different jurisdictions through a single application.

India is not a signatory to the Hague Agreement, which allows the protection of designs in multiple countries through a single filing.

Source: <https://www.legalserviceindia.com/article/l195-Copyright-Law-in-India.html>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/627956/IP-Rights-in-India.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627956/IP-Rights-in-India.pdf)

<https://copyright.gov.in/>

<https://www.meity.gov.in/content/copyright>

Q.52)

Ans) b

Exp) Option b is correct.

**Statement 1 is incorrect:** Primary Cooperative Banks, popularly known as Urban Cooperative Banks (UCBs) are **registered as cooperative societies under the provisions of, either the State Cooperative Societies Act of the State** concerned or the Multi State Cooperative Societies Act, 2002. They are regulated and supervised by the Registrar of Cooperative Societies (RCS) of State concerned or by the Central Registrar of Cooperative Societies (CRCS), as the case may be.

**Statement 2 is correct:** The **Reserve Bank of India** has been vested powers to **issues license to UCBs** under Section 22 and 23 Banking Regulation Act, 1949 (AACs) to carry on banking business and to open new places of business (branches, extension counters, etc.) respectively

**Statement 3 is incorrect:** The 2022 notification by RBI specifies that **UCBs can raise capital through three broad methods, viz: - issuance of equity shares, preference shares, and debt instruments.**

**First**, UCBs can raise funds by issue of equity to enrolled members within the area of operation or through additional equity shares to existing members.

**Second**, UCBs can augment Tier – I & Tier – II capital by issuing Perpetual Cumulative & Non-Cumulative Preference Shares, and, Redeemable Cumulative & Non-Cumulative Preference Shares.

**Third**, UCBs can issue Perpetual Debt Instruments (PDIs) for Tier – I Capital and Long Term Subordinated Bonds as Tier – II Capital. It can be issued to institutional investors also, with the consent of the depositors.

Source: Microsoft Word – 89735.doc (rbi.org.in)

New RBI guidelines on urban cooperative banks explained | The Financial Express

7 PM Editorial |Regulatory gaps, lax governance have precipitated a crisis in co-operative banking| 9th May 2020 -ForumIAS Blog

Q.53)

Ans) c

Exp) Option c is correct.

The marginal propensity to import (MPM) is the **amount imports increase or decrease with each unit rise or decline in disposable income**. The idea is that rising income for businesses and households spurs greater demand for goods from abroad and vice versa. It is the change in imports induced by a change in disposable income.

If, for example, a country's MPM is 0.3, then each rupee of extra income in that economy induces 30 paise of imports.

Countries that consume more imports as the income of their population rises have a significant impact on global trade.

Source: [https://www.investopedia.com/terms/m/marginal-propensity-import-mpm.asp#:~:text=The%20marginal%20propensity%20to%20import%20\(MPM\)%20is%20the%20change%20in,from%20abroad%20and%20vice%20versa](https://www.investopedia.com/terms/m/marginal-propensity-import-mpm.asp#:~:text=The%20marginal%20propensity%20to%20import%20(MPM)%20is%20the%20change%20in,from%20abroad%20and%20vice%20versa)

Q.54)

Ans) b

Exp) Option b is the correct answer.

Deflation causes the nominal costs of capital, labor, goods, and services to fall, though their relative prices may be unchanged.

**Statement 1 is incorrect:** Deflation is a **decrease in the general price level** of goods and services. In other words, deflation is negative inflation. When it occurs, the **value of currency increases** over time. Thus, more goods and services can be purchased for the same amount of money.

**Statement 2 is correct:** Deflation happens when the demand for goods falls in relation to the supply. **The reduction in demand occurs due to a reduction in the supply of money in an economy**. In simple words, a shortage of money in circulation leads to a reduction in demand for goods, thus leading to deflation. A

fall in money supply can mean that people, instead of spending their money immediately, prefer to save more of it. This discourages spending in the economy. Thus, leading to a decline in demand.

**Statement 3 is correct:** Negative events in the economy, such as recession, may cause a **fall in aggregate demand**. A decline in aggregate demand typically results in subsequent lower price and finally deflation if continued over longer period.

Source: <https://corporatefinanceinstitute.com/resources/knowledge/economics/deflation/>

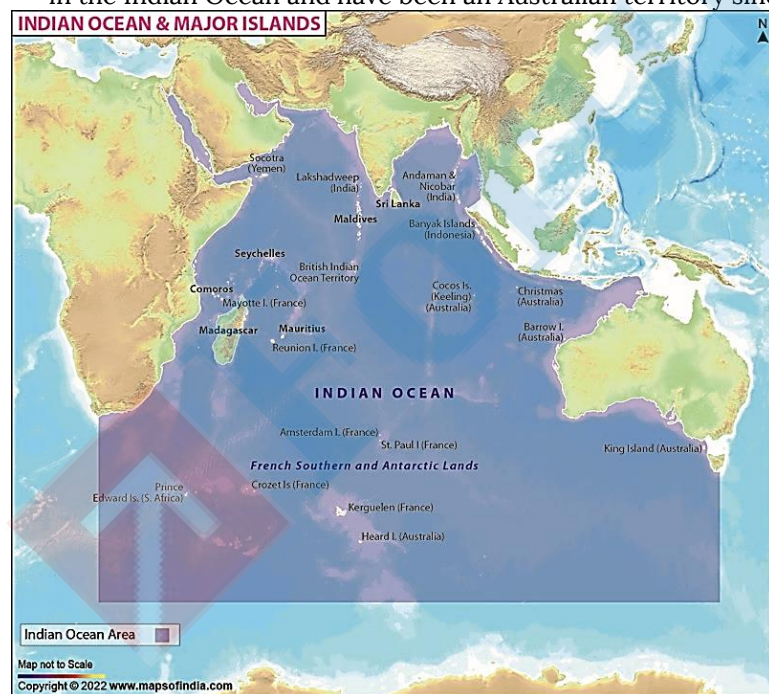
Q.55)

Ans) c

Exp) Option c is the correct answer.

The islands of Indian Ocean from North to South are as follows:

- 1) **Maldives:** The Maldives consists of 1,192 coral islands grouped in a double chain of 26 atolls, that stretch along a length of 871 kilometres north to south, 130 kilometres east to west, spread over roughly 90,000 square kilometres, of which only 298 km<sup>2</sup> is dry land, making this one of the world's most dispersed countries. It lies between latitudes 1°S and 8°N, and longitudes 72° and 74°E.
- 2) **British Indian Ocean Territory or Chagos archipelago:** It also known as the Chagos Islands. The archipelago, located in the Central Indian Ocean, is part of British Indian Ocean Territory (BIOT) and Mauritius claims the archipelago as its own.
- 3) **Reunion Island:** Réunion is an island in the Indian Ocean that is an overseas department and region of France. It is located approximately 550 km east of the island of Madagascar and 175 km southwest of the island of Mauritius.
- 4) **Heard Island and McDonald Islands:** The Territory of Heard Island and McDonald Islands is an Australian external territory comprising a volcanic group of mostly barren Antarctic islands, about two-thirds of the way from Madagascar to Antarctica. The group's overall size is 372 km<sup>2</sup> in area and it has 101.9 km of coastline. Discovered in the mid-19th century, the islands lie on the Kerguelen Plateau in the Indian Ocean and have been an Australian territory since 1947



Source: Islands in the Indian Ocean (mapsofindia.com)

Q.56)

Ans) b

Exp) Option b is the correct answer.

Boao Forum for Asia (BFA) is a non-profit international organization founded in the year 2001.

**Statement 1 is correct:** Boao Forum is committed to promote **regional economic integration in whole Asia**. It is modeled after the World Economic Forum held annually in Davos, Switzerland. So, it also called Davos of the East.

**Statement 2 is incorrect:** Forum currently has 29 **participant countries including India**. Other countries include China, Australia, Japan, Indonesia, Bangladesh, Iran, and Nepal among others.

**Statement 3 is correct:** The headquarter of the forum is **situated in China**. The **secretariat** of Boao Forum is in **Beijing** and it holds its annual conference in Boao in Hainan, China on a regular basis.

Source: <https://blog.forumias.com/boao-forum-for-asia-annual-conference-2021/>

Q.57)

Ans) d

Exp) Option d is the correct answer.

A convertible debenture is an instrument that can be converted into equity shares of the Company who issued them. The Conversion can be done after a predetermined period.

**Statement 1 is correct:** **Debenture holders are creditors of a company**. Shareholders have a right to participate in the affairs of the company. The holders of shares are the owners of a company. So, on conversion the debenture holder will become the owner (commensurate to the percentage shareholding) of the company.

**Statement 2 is correct:** **Dividend** is paid on **shares** by the company. The rate of dividend is not fixed. Whereas, **Interest is paid on debentures** at a fixed rate.

**Statement 3 is correct:** Debenture holders get payment in **priority** as compared to all the creditors.

**Equity shares** get the **refund only** when **all liabilities** have been **paid off** in case of liquidation.

Knowledge Base:

Debentures are usually issued for raising funds for the company. They are mainly issued for cash. The benefit of having Debentures in the Company is that they have lower interest rates than other types of loans.

There are two types of Debentures:

- 1) Convertible Debentures
- 2) Non-Convertible Debentures - These instruments always retain the character of debt and cannot be changed into equity shares. As they cannot be converted to equity shares, the interest rates of these instruments are usually higher than other convertible instruments.

**Equity Shares** give investors the right to vote, profit sharing, and claim on the assets. They are also called the Ordinary Shares in the Company. **No preference is given** to these shares regarding the payment of Dividend and while repayment of Capital.

Source: <https://www.yourarticlelibrary.com/difference/major-difference-between-equity-shares-and-debentures/26217>

Q.58)

Ans) a

Exp) Option a is the correct answer.

Central welfare schemes, implemented by the government to provide financial and other aids to individuals who cannot support themselves, can be categorized into two sections – centrally sponsored schemes and central sector schemes.

**Statement 1 is correct:** **Central Sector Schemes** are the government schemes which are designed, planned and **implemented** by the **Central government**. Whereas the implementation of **Centrally Sponsored Schemes** is made under the **union territory or state government**.

Centrally Sponsored Schemes (CSS) are implemented by state governments of India but are largely funded by the Central Government with a defined State Government share.

**Statement 2 is incorrect:** **Central Sector Scheme** is formulated mainly on subjects in **Union List** while the **Centrally Sponsored Scheme** focuses on subjects in **State List**. **Centrally Sponsored Scheme** may also be formed for Concurrent List.

**Statement 3 is correct:** **Central Sector Schemes** are the schemes that are **entirely and directly funded** by the **Central government**. Whereas **Centrally Sponsored Scheme** is divided into three parts (a) core of the core (b) core and (c) optional. These are divided on the basis of the financial involvement of the states.

**Statement 4 is incorrect:** Pradhan Mantri Mudra Yojana is a Central Sector Scheme while the MGNREGA is a Centrally Sponsored Scheme. The MGNREGA scheme which comes under the core of the core group will see the state pooling in 25% of funds whereas the rest is taken care of by the Centre.

Source: [https://www.aisect.org/blog/blog\\_detail/The-Difference-Between-Central-Sector-Schemes-and-Centrally-Sponsored-Schemes](https://www.aisect.org/blog/blog_detail/The-Difference-Between-Central-Sector-Schemes-and-Centrally-Sponsored-Schemes)

[http://www.arthapedia.in/index.php?title=Central\\_Sector\\_and\\_Centrally\\_Sponsored\\_Schemes](http://www.arthapedia.in/index.php?title=Central_Sector_and_Centrally_Sponsored_Schemes)

<https://www.business-standard.com/about/what-is-centrally-sponsored-schemes>

<https://ganderbal.nic.in/service/centrally-sponsored-schemes/>

Q.59)

Ans) d

Exp) Option d is the correct answer.

The Foreign Exchange Management Act (FEMA) mandates that a Non-Resident Indian (NRI) must maintain an NRI account if they wish to carry out financial transactions in India. There are three types of Non-Resident Indian (NRI) deposit accounts - Foreign Currency Non-Resident Account (FCNR), Non-Resident External Account (NRE) and Non-Resident Ordinary Account (NRO).

**Statement 1 is incorrect:** Foreign Currency Non-Resident Account (FCNR) is a foreign currency denominated account. FCNR is a fixed deposit account opened by an NRI to transfer their foreign income in the same currency.

On the other hand, NRE accounts are Indian Rupee denominated accounts which means all the funds you deposit are maintained in Indian rupee. When you deposit foreign currency into this account, the current exchange rate is applied by the receiving bank and Indian rupees matching the exchange rate are deposited in your account.

**Statement 2 is incorrect:** NRI investments that are repatriable are considered Foreign Direct Investment while non-repatriable investments are considered domestic investment. The government last year, had clarified that downstream investment by a company owned and controlled by non-resident Indians (NRIs) on a non-repatriation basis will not be considered foreign direct investment (FDI).

Knowledge Base: FCNR is a fixed deposit account opened by an NRI to transfer their foreign income in the same currency. Fundamentally, it differs from NRE and NRO in terms of the underlying currency denomination. NRIs can deposit funds in 7 currencies - US Dollars, UK Pound, Singapore Dollar, Hong Kong Dollar, Canadian Dollar, Australian Dollar and Swiss Franc. There are no restrictions on repatriation from an FCNR account.

An NRO account is also an Indian rupee-denominated account and is available as a savings account and a fixed deposit. However, while an NRE account is used to keep money earned overseas, an NRO account is for managing the income you earn in India. This income can be through sources like rent (from a property you own in India), dividends, salaries, etc.

Investment on repatriation basis means the sale or maturity proceeds of an investment, net of taxes, are eligible to be transferred out of India. In case of non-repatriation investments, this cannot be transferred out of the country.

Source: <https://www.livemint.com/news/india/dpiit-clarifies-on-fdi-status-of-nri-investments-11616163597415.html>

<https://www.dbs.com/in/treasures/articles/nri-hub/live-enriched/types-of-nri-account>

[https://m.rbi.org.in/scripts/FS\\_FAQs.aspx?Id=52&fn=5](https://m.rbi.org.in/scripts/FS_FAQs.aspx?Id=52&fn=5)

Q.60)

Ans) a

Exp) Option a is the correct answer.

**Statement 1 is correct:** A currency mismatch between domestic and foreign currencies arises whenever an entity's financial position is sensitive to changes in the exchange rate. If the value of rupee depreciates, then it becomes a burden on the borrower as they have to give more money in return than intended initially.

**Statement 2 is incorrect:** One of the benefits of borrowing in foreign currency is that funding sources in major global currencies are typically more abundant and cheaper than local sources of funding in

domestic currency. Therefore, in countries where local funding sources are scarce, external borrowing by the government can be an important driver of economic growth and development.

**Statement 3 is incorrect:** Another benefit of government borrowing in foreign currency enables the central bank to **accumulate foreign exchange reserves**. This serves as a backstop for the domestic currency.

**Statement 4 is correct:** Borrowing in foreign currency **reduces a nation's ability to tackle the financial crisis**. The vulnerability to sudden shifts in investor confidence stem from the borrowing country's inability to create the foreign currency needed to repay the creditors if many of them **decide to withdraw funding** at the same time.

While borrowing in domestic currency does not eradicate the risk of a debt crisis altogether, it **indirectly enables the country to cope better** with the crisis should it occur. In particular, **if both the government and the private sector borrow mainly in domestic currency**, the central bank will be less concerned about exchange rate fluctuations. Owing to this, the central bank will be able to lend freely to commercial banks in times of crisis to contain liquidity disruptions.

Source: [http://www.pse-journal.hr/en/archive/costs-and-benefits-of-government-borrowing-in-foreign-currency-is-it-a-major-source-of-risk-for-eu-member-states-outside-the-euro\\_6632/](http://www.pse-journal.hr/en/archive/costs-and-benefits-of-government-borrowing-in-foreign-currency-is-it-a-major-source-of-risk-for-eu-member-states-outside-the-euro_6632/)

Q.61)

Ans) c

Exp) Option c is the correct answer.

**Sugarcane Pricing Policy:** With the amendment of the Sugarcane (Control) Order, 1966 in 2009, the concept of Statutory Minimum Price (SMP) of sugarcane was replaced with the 'Fair and Remunerative Price (FRP)' of sugarcane for 2009-10 and subsequent sugar seasons. The cane price announced by the Central Government is decided on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP) in consultation with the State Governments and after taking feedback from associations of sugar industry.

**Options 1, 2, 3, 5 and 6 are correct:** The amended provisions of the Sugarcane (Control) Order, 1966 provides for fixation of FRP of sugarcane having regard to the following factors:

- 1) cost of production of sugarcane;
- 2) **return to the growers from alternative crops and the general trend of prices of agricultural commodities;**
- 3) **availability of sugar to consumers at a fair price;**
- 4) **price at which sugar produced from sugarcane is sold by sugar producers;**
- 5) **recovery of sugar from sugarcane;**
- 6) **the realization made from sale of by-products viz. molasses, bagasse and press mud or their imputed value;**
- 7) reasonable margins for the growers of sugarcane on account of risk and profits

**Option 4 is incorrect:** Under the FRP system, the farmers are not required to wait till the end of the season or for any announcement of the profits by sugar mills or the Government.

This system assures margins on account of profit and risk to farmers, irrespective of the fact whether sugar mills generate profit or not and is not dependent on the performance of any individual sugar mill.

Source: [https://dfpd.gov.in/gen\\_policy.htm](https://dfpd.gov.in/gen_policy.htm)

Q.62)

Ans) d

Exp) Option d is the correct answer.

The tax-to-GDP ratio is a measure of a nation's tax revenue relative to the size of its economy.

**Statement 1 is incorrect:** The tax-to-GDP ratio of India has not been consistently increasing during the last 5 years. The tax-to-GDP was 11 per cent in FY19 and it **fell to 9.9 per cent in FY 20** and **marginally improved to 10.2 per cent in FY21 (partly due to decline in GDP)**.

**Statement 2 is incorrect:** During the last 5 years, the share of indirect taxes in total tax revenue of the Union Government have **not remained higher** than the share of direct taxes. **Direct taxes accounted for**

51.3% of total tax revenues in 2016-17 and the rest came from indirect taxes. In 2020-21, the **direct taxes** had a share of 56.4%, while indirect taxes had a share of 53.6%.

**Statement 3 is incorrect:** During the last five years, the contribution of corporation tax in annual tax revenue **has not always remained higher than that of the GST**. In 2020-21, 28.5% of the revenue came from GST followed by corporate tax and personal income tax, 28.1% and 28.3% respectively.

However, in 2021-22 the trend reversed.



Source: <https://www.thehindubusinessline.com/economy/finmin-expects-highest-ever-tax-gdp-ratio-this-fiscal-says-revenue-secretary-tarun-bajaj/article64966670.ece#:~:text=It%20may%20be%20recalled%20that,due%20to%20decline%20in%20GDP>

<https://www.moneycontrol.com/news/business/stocks/sml-isuzu-share-zooms-more-than-18-on-product-price-hike-8314511.html>

<https://www.investopedia.com/terms/t/tax-to-gdp-ratio.asp#:~:text=The%20tax%20to%20GDP%20ratio%20is%20the%20ratio%20of%20the,time%20period%20by%20the%20GDP>

Q.63)

Ans) c

Exp) Option c is the correct answer.

There was a huge Macroeconomic imbalance of high current account deficit and high fiscal deficit. The crisis did not develop overnight. It was caused by decades of imprudence. There was reliance on populist measures.

The causes of 1991 Balance of Payment Crisis are listed below:

**Option 1 is correct:** The Government Expenditure was more than the earnings. Hence the **Fiscal Deficit was high**. The Gross Fiscal deficit rose from 9 % of GDP in 1980-81 to 12.7 % of GDP in 1990-91.

**Option 2 is correct:** There was an exponential increase in internal debt of central government. It rose from 35 % of GDP in 1985-86 to 53 % of GDP in 1990-91.

**Option 3 is correct:** In addition, the country was importing more than exporting. Before the onset of the 1991 crisis, external shocks contributed to widening of the Current Account Deficit. The current account deficit was triggered by the rise in crude oil prices because of the Gulf War. **Due to this, the Forex Reserves of India depleted massively** despite substantial borrowings from the International Monetary Fund (IMF) earlier in the year.

**Option 4 is incorrect:** Overvaluation of the rupee

Since 1987, the Indian rupee had been depreciating in real terms as compared with many of India's trade competitors. However, between October 1990 and March 1991, the REER of the rupee appreciated by about 2.0 per cent as a result of widening inflation differentials between India and the major industrialised countries.

**Option 5 is correct:** There was a massive **rise in inflation** rates. The upsurge in inflationary pressures was principal reason for BoP crisis. The large growth in overall liquidity and the consequent pressure on the price level was evident until September 1989.

**Option 6 is correct:** The **gulf crisis** had a significant adverse impact on the flow of remittances into India. during the period 1982 to 1986, Iraq and Kuwait accounted for 12.0 per cent of annual labour outflows from India. In 1987, these two countries accounted for about 14.0 per cent of the estimated migrant population of about one million in West Asia. The gulf crisis also had an adverse impact on the capital account. The fall in capital inflows compounded the problem of financing the rising level of CAD. Oil shock due to rise in international oil prices translates to a higher import bill, worsens terms of trade and consequently results in a deterioration of the trade balance.

Knowledge Base:

Other reasons include:

- 1) India did not have enough Forex reserves to conduct business with the world.
- 2) India was on the verge of defaulting on its International Debt Obligations.
- 3) Investors pulled out their money.
- 4) Short term credit dried up, as exporters were apprehensive that they would not be paid.

Source: [https://rbidocs.rbi.org.in/rdocs/content/PDFs/Chapter11\\_04122018.pdf](https://rbidocs.rbi.org.in/rdocs/content/PDFs/Chapter11_04122018.pdf)

Q.64)

Ans) a

**Exp) Option a is the correct answer.**

Recently, the government introduced the Insolvency and Bankruptcy Code (Amendment Bill), 2021 in the Lok Sabha. The Bill was passed and it replaced the Insolvency and Bankruptcy Code Amendment Ordinance 2021 promulgated in April 2021.

**Statement 1 is correct:** It introduced an alternate insolvency resolution process for Micro, Small and Medium Enterprises (MSMEs) with defaults up to Rs 1 crore called the **Pre-packaged Insolvency Resolution Process (PIRP)**. Distressed Corporate Debtors (CDs) are permitted to initiate a PIRP with the approval of two-thirds of their creditors to resolve their outstanding debt under the new mechanism.

**Statement 2 is incorrect:** No such amendment has been made to IBC. However, the code stipulates that the resolution process of a stressed company will have to be completed in a maximum of **270 days**.

Source: <https://www.moneycontrol.com/news/business/explained-all-you-need-to-know-about-the-insolvency-and-bankruptcy-code-amendment-bill-2021-7245131.html>

Q.65)

Ans) b

**Exp) Option b is the correct answer.**

The Indian Ocean Rim Association is an inter-governmental organisation which was established on 7 March 1997. **The vision for IORA originated during a visit by President Nelson Mandela of South Africa to India in 1995.** IORA's apex body is the Council of Foreign Ministers (COM) which meets annually. Indian Ocean Rim Association (IORA) is a 23-member regional grouping of countries in the Indian Ocean Region.

**Statement 1 is incorrect:** India is a founding member of IORA that was established in 1997. **(China is not a member of IORA)** The IORA Secretariat is located in Port Louis, Mauritius. China is a dialogue partners of IORA along with 9 others.

**Statement 2 is correct:** All sovereign States of the Indian Ocean Rim are eligible for membership of the Association. Its members include:

Australia, Bangladesh, Comoros, France, **India**, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, United Arab Emirates and Yemen.

**Knowledge Base:**

IORA has identified six Priority Areas (Academic, Science and Technology, Fisheries Management, Tourism and Cultural Exchanges, Disaster Risk Management, Maritime Safety and Security, Trade and Investment Facilitation) and 2 Cross-cutting Issues (Blue Economy and Women's Economic Empowerment) for regional cooperation.

Source: <https://www.iora.int/en/about/about-iora>

**Q.66)**

**Ans) a**

**Exp) Option a is the correct answer.**

FDI is an important monetary source for India's economic development. Foreign Direct Investments are commonly made in open economies that have skilled workforce and growth prospect. FDIs not only bring money with them but also skills, technology and knowledge.

**Options 1, 2 and 3 are correct: FDI prohibition in India**

There are a few industries where FDI is strictly prohibited under any route. These industries are

- 1) **Atomic Energy Generation**
- 2) Any Gambling or Betting businesses
- 3) Lotteries (online, private, government, etc)
- 4) Investment in Chit Funds
- 5) **Nidhi Company**
- 6) Agricultural or Plantation Activities (although there are many exceptions like horticulture, fisheries, tea plantations, Pisciculture, animal husbandry, etc)
- 7) Housing and Real Estate (except townships, commercial projects, etc)
- 8) Trading in TDR's
- 9) **Cigars, Cigarettes, or any related tobacco industry**

**Options 4 and 5 are incorrect: Sectors which come under up to 100% Automatic Route' category are**

- 1) Banking & Public sector: 20%
- 2) Broadcasting Content Services: 49%
- 3) Core Investment Company: 100%
- 4) Food Products Retail Trading: 100%
- 5) Mining & Minerals separations of titanium bearing minerals and ores: 100%
- 6) Multi-Brand Retail Trading: 51%
- 7) **Print Media** (publications/printing of scientific and technical magazines/ specialty journals/ periodicals and facsimile edition of foreign newspapers): 100%
- 8) **Print Media** (publishing of newspaper, periodicals and Indian editions of foreign magazines dealing with news & current affairs): 26%
- 9) Banking & Public sector: 20%
- 10) **Satellite (Establishment and operations): 100%**

**Knowledge Base:**

The present policy (Consolidated FDI Policy of Government) puts atomic energy in the list of prohibited sectors. However, there is no restriction on Foreign Direct Investment (FDI) in the nuclear industry for manufacturing of equipment and providing other supplies for nuclear power plants and related other facilities.

Source: <https://www.business-standard.com/about/what-is-fdi>

Q.67)

Ans) c

Exp) Option c is the correct answer.

Wholesale inflation measured by the wholesale price index, rose to the highest since 1991 hitting 14.2% in November 2021. Retail inflation, measured by the consumer price index, in contrast, is at a more acceptable level of 4.9%. Not only are the levels of inflation indicated by the two indices widely different, their directions have diverged too. Often such a divergence is blamed on the composition of these indices. Both have different constituents and varying weight assigned to them. There are differences in the way the indices are compiled too. The reasons for divergence between CPI and WPI are given below:

**Option 1 is correct:** Traditionally, the major reason for the CPI inflation being higher than WPI inflation has been that food articles had a **higher weightage (45.86 per cent) in CPI** than in WPI (22.62 per cent). This factor plays an important role, whenever the primary trigger of inflation is food inflation. It is to be noted that food inflation in the last few years is being spurred more by items such as vegetables, pulses and eggs, meat and fish than cereals.

**Option 2 is correct:** Another difference between CPI and WPI is the services weight. The 'miscellaneous' category in CPI, which makes up about a fourth of the index, **includes services** like education, health, recreation, and goods such as gold jewellery. Services are **not included in WPI**. WPI, in turn, includes commodities such as minerals, which are not there in CPI.

**Option 3 is incorrect:** Cost of Fuel and power are taken into account in both **WPI and CPI**. Fuel and power category has a much **bigger weight in WPI** (13.15 per cent) than in CPI (6.84 per cent). Similarly, manufactured goods are given more weightage in the wholesale basket. Therefore, any movement in the price of such items will move the WPI more than it does the CPI.

Knowledge Base: The CPI basket is a reflection of the buying behaviour of consumers. Consumption patterns have been determined using the Consumer Expenditure Survey of 2011-12 and, based on that, weights are assigned to different items, according to a manual on CPI by the Ministry of Statistics.

For WPI, weights are assigned based on the share of the respective items in total wholesale transactions in the economy, according to WPI methodology published by the Ministry of Commerce.

Source: <https://www.bloomberqint.com/business/mixed-messages-why-wholesale-and-retail-inflation-are-diverging>

<https://www.thehindubusinessline.com/opinion/understanding-the-cpiwpi-divergence/article7924096.ece>

[https://eaindustry.nic.in/pdf\\_files/cmonthly.pdf](https://eaindustry.nic.in/pdf_files/cmonthly.pdf)

<https://blog.forumias.com/eco-103-inflation/>

Q.68)

Ans) d

Exp) Option d is the correct answer.

Rubber is an **equatorial crop**, but under special conditions, it is also grown in tropical and sub-tropical areas. It requires **moist and humid climate with rainfall of more than 200 cm.** and temperature above 25°C. Rubber is an **important industrial raw material**. It is mainly grown in Kerala, Tamil Nadu, Karnataka and Andaman and Nicobar Islands and Garo hills of Meghalaya. In 2010-11 India ranked fourth among the world's natural rubber producers.

**Option a is incorrect:** India is believed to be the original home of the cotton plant. Cotton is one of the main raw materials for cotton textile industry. It **requires high temperature, light rainfall** or irrigation, 210 frost-free days and bright sun-shine for its growth. It is a kharif crop and requires 6 to 8 months to mature.

**Option b is incorrect:** Sugarcane is a **tropical as well as a subtropical** crop. It grows well in hot and humid climate with a temperature of 21°C to 27°C and an annual rainfall between 75cm and 100cm. Irrigation is required in the regions of low rainfall.

**Option c is incorrect:** Jute is known as the golden fibre. Jute grows well on well-drained fertile soils in the flood plains where soils are renewed every year. **High temperature is required during the time of growth.** West Bengal, Bihar, Assam, Odisha and Meghalaya are the major jute producing states. It is used in making gunny bags, mats, ropes, yarn, carpets and other artefacts.

Source: Chapter 4.pmd (ncert.nic.in)

Rubber Crop Cultivation Guide | Rubber Farming | IndiaAgroNet

Q.69)

Ans) a

Exp) Option a is the correct answer.

A country's importing and exporting activity can influence its GDP, its exchange rate, and its level of inflation and interest rates.

**Statement 1 is correct:** A rising level of imports and a growing trade deficit can have a negative effect on a country's exchange rate. When there are too many imports coming into a country in relation to its exports, it can distort a nation's balance of trade and devalue its currency.

**Statement 2 is incorrect:** A weaker domestic currency stimulates exports and makes imports more expensive; conversely, a strong domestic currency hampers exports and makes imports cheaper.

Higher inflation can also impact exports by having a direct impact on input costs such as materials and labor.

Source: <https://www.investopedia.com/articles/investing/100813/interesting-facts-about-imports-and-exports.asp>

Q.70)

Ans) b

Exp) Option b is the correct answer.

The Asian Infrastructure Investment Bank (AIIB) is a multilateral development bank with a mission to improve social and economic outcomes in Asia. By investing in sustainable infrastructure and other productive sectors **in Asia and beyond**, it aims to better connect people, services and markets. Whereas the Asian Development Bank's (ADB) is founded in 1966, with its headquarters in **Manila, Philippines**.

**Statement 1 is incorrect:** Both ADB and AIIB have members outside the Asia-Pacific region. AIIB began operations in January 2016 and now has 103 approved members worldwide (by April 2022). ADB is composed of 68 shareholding members (by April 2022), 49 of which are **from the Asia and Pacific region** and rest from **outside the region**.

ADB has 68 members (as of 23 March 2019): 49 members from the Asian and Pacific Region, 19 members from **Other Regions**.

**Statement 2 is correct:** Both AIB and AIIB treat the Pacific Islands, Australia and New Zealand as **regional members**. However, the AIIB bank has a more expansive definition of Asia than the ADB. The AIIB also includes Turkey as a regional member along with 8 Middle Eastern countries. The ADB has no members from the Middle East and classifies Turkey as a non-regional member.

**Statement 3 is incorrect:** In GDP terms, the ADB's 68 members are larger collectively than the AIIB's 103. ADB's members represent around **83.44 percent of the global economy** and 66% of the world population. On the other hand, the 103 approved members of AIIB represent **approximately 79 percent of the global population and 65 percent of global GDP**.

**Statement 4 is correct:** India is the founding member of both ADB and AIIB. India became the founding member of the Asian Development Bank (ADB) in 1966. Today, the country is ADB's fourth-largest shareholder and its top borrower since 2010. Also, India is a founding member of the Asia Infrastructure Investment Bank. India itself has an 8.7% share in AIIB, being the second-largest investor with 8.4 billion Dollars stake.

Source: <https://www.iseas.edu.sg/media/commentaries/aiib-vs-adb-memberships-larger-and-smaller-by-malcolm-cook/#:~:text=The%20AIIB%20has%20a%20more,and%207%20from%20South%20America.https://www.worlddata.info/alliances/adb-asian-development-bank.php#:~:text=This%20is%2038.5%25%20of%20the,percent%20of%20the%20global%20economy.https://www.aiib.org/en/about-aiib/index.html>

Q.71)

Ans) a

Exp) Option a is the correct answer.

**Pair 1 is correct: Pratimoksha is a Buddhist monastic code.** It is a set of 227 rules that govern the daily activities of the monk and nun. The prohibitions of the Pratimoksha are arranged in the Pali canon according to the severity of the offense from those that require immediate and lifelong expulsion from the order, temporary suspension, or various degrees of restitution or expiation to those that require confession only. Also, it has given rules for settling disputes within the monastic community. The entire Pratimoksha is recited during the Uposatha, or fortnightly assembly of Theravada monks.

**Pair 2 is correct:** In the context of Buddhism **Uposatha means fortnightly meetings of the Buddhist monastic assembly** at the times of the full moon and the new moon, to reaffirm the rules of discipline. The Uposatha observance **now confined almost entirely to the Theravada tradition of Southeast Asia** and it can be traced back to pre-Buddhist ceremonies of ancient India. Later Buddhists added the quarter days in the lunar cycle, establishing four holy days each month.

**Pair 3 is incorrect:** According to the Theravada tradition in Buddhism, Samatha and Vipassana form an integral part of the Noble Eightfold Path as described by the Buddha. **Samatha deals with calming the mind and Vipassana means the insight into the three marks of existence:** impermanence, suffering, and the realisation of non-self.

Source: <https://www.britannica.com/topic/patimokkha>

<https://www.britannica.com/topic/uposatha>

Art and culture by Nitin singhania. Chapter name- Buddhism and Jainism. Page no. 475.

Q.72)

Ans) a

Exp) Option a is the correct answer.

The Fishing Cat Conservation Alliance is a team of conservationists, researchers and enthusiasts across the world working to achieve a single dream of a world with functioning floodplains and coastal ecosystems that ensure survival of the fishing cat and all species with which it shares a home.

**Statement 1 is correct:** The fishing cats are nocturnal and apart from fish also preys on frogs, crustaceans, snakes, birds, and scavenges on carcasses of larger animals.

**Statement 2 is correct:** **The conservation threats to fishing cats** in the Eastern Ghats are **mainly habitat loss** [wetland degradation and conversion for aquaculture and other commercial projects], **sand mining along river banks, agricultural intensification resulting in loss of riverine buffer and conflict with humans** in certain areas resulting in targeted hunting and retaliatory killings.

**Statement 3 is incorrect:** Fishing cat are about twice the size of a typical house cat. The size of an adult ranges from 57-78 cm and weighs between 5-16 kg.

The Rusty-Spotted Cat is the world's smallest wild cat weighing 0.8-1.6 kg and is 14 to 19 inches in length (not counting the tail which is half the size of the body).

**Statement 4 is incorrect:** In India, fishing cats are mainly found in the mangrove forests of the Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra River valleys and in the Western Ghats



**Fig. Fishing cat**

Source: <https://www.thehindu.com/sci-tech/energy-and-environment/campaign-by-the-fishing-cat-conservation-alliance-to-protect-the-feline/article33741075.ece>

**Q.73)**

**Ans) b**

**Exp) Option b is the correct answer.**

**Statement 1 is incorrect:** The **Raimona National Park is within the Bodoland Territorial Region**. The area of the park includes the northern part of the notified Ripu Reserve Forest (508.62 sq. km), which forms the western-most buffer to the Manas National Park that straddles the India-Bhutan border. **Raimona was bounded on the west by the Sankosh river (not Teesta River) along the Assam-West Bengal border (and not along Assam- Arunachal Pradesh Border) running southward from the India-Bhutan border and the Saralbhangra river on the east till it touched the India-Bhutan border on the north and the southern part of the Ripu Reserve Forest.**

1) **The Pekua River defines Raimona's southern boundary.** Raimona also shares contiguous forest patches of the Phipsoo Wildlife Sanctuary and the Jigme Singye Wangchuk National Park in Bhutan creating a transboundary conservation landscape of more than 2,400 sq. km,"

**Statement 2 is correct:** The **National Tiger Conservation Authority (NTCA)** has declared the combined areas of the Tamor Pingla Wildlife Sanctuary and the **Guru Ghasidas National Park as a Tiger Reserve**. **Guru Ghasidas National Park is significant as it is considered as the Asiatic cheetah's last-known habitat in India.** It was a Part of Sanjay Dubri National Park originally; Guru Ghasidas Park was set up as a separate entity in Sarguja region of Chhattisgarh after the state came into being in 2001.

**Statement 3 is correct:** The **Nilgiri Tahr is an endangered mountain ungulate** endemic to the southern part of the Western Ghats. The species is found in a roughly 400 km stretch in the Western Ghats which falls in the states of Kerala and Tamil Nadu. The local distribution of the species is attributed to the animal's preference for the habitat with grasslands with steep rocky cliff shelters. **The Eravikulam National Park has the highest density and largest surviving population of Nilgiri tahr.**

**Statement 4 is correct:** Papikonda National Park has a dominant area covered with moist deciduous forest and it has become home for the leopard cat in the Eastern Ghats. **The 1,012.86 sq km national park is on both sides of river Godavari in the northern Eastern Ghats.** Of the 13 protected forests in Andhra Pradesh, the leopard cat has been sighted only in the PNP.

Source: <https://www.thehindu.com/news/national/raimona-becomes-assams-sixth-national-park/article34736719.ece>

<https://www.keralatourism.org/munnar/nilgiri-tahr.php>

<https://www.financialexpress.com/lifestyle/travel-tourism/why-indias-newest-tiger-reserve-in-chhattisgarh-is-so-important/2345592/>

<https://www.thehindu.com/news/national/andhra-pradesh/papikonda-national-park-becomes-home-for-leopard-cats/article26981103.ece>

**Q.74)**

**Ans) c**

**Exp) Option c is the correct answer.**

The State of Forest Reports, which are published biennially, provide a comprehensive account of the Forest Cover Scenario of the Country to different user groups. India State of Forest Report (ISFR) is a biennial publication of Forest Survey of India (FSI) under the Ministry of Environment Forest & Climate Change

**Option a is incorrect:** India State of Forest Report (ISFR) is a biennial( and not an annual publication) publication of Forest Survey of India (FSI), an organization under the Ministry of Environment, Forest & Climate Change, Government of India. It is a widely used primary information source across the Central Government, State Governments and forestry professionals of the State Forest Departments, academia, international organizations and other stakeholders.

**Option b is incorrect:** The total forest and tree cover of the country is 80.9 million hectare which is 24.62 percent of the geographical area of the country. As compared to the assessment of 2019, there is an increase of 2261 sq km in the total forest and tree cover of the country. Out of this, the increase in the forest cover has been observed as 1540 sq km and that in tree cover is 721 sq km.

**Option c is correct:** In the present ISFR 2021, FSI has included a new chapter related to the assessment of forest cover in the Tiger Reserves, Corridors and Lion conservation area of India. In this context, the decadal assessment of change in forest cover within Tiger Reserves, Corridors and Lion conservation area helps in assessing the impact of conservation measures and management interventions that have been implemented over the years.

**Option d is incorrect:** According to the India state of forest report, in the Area-wise criteria Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. In terms of forest cover as percentage of total geographical area, the top five States are Mizoram (84.53 per cent), Arunachal Pradesh (79.33 per cent), Meghalaya (76.00 per cent), Manipur (74.34 per cent) and Nagaland (73.90 per cent).

Source:

<https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/jan/doc20221207001.pdf>

Q.75)

Ans) d

Exp) Option d is the correct answer.

This question is based on the article “Wildfires will be more frequent, larger and intense due to climate change: UNEP” published in Down To Earth on 22nd February 2022.

The United Nations Environment Programme (UNEP) has released its latest Annual Frontiers Report. According to the report, the planet is facing the triple crises of climate disruption, biodiversity loss and pollution. The “three planetary crises” of climate change, biodiversity loss and pollution are reinforcing each other and driving further damage to the environment and to our health.

The report identifies three issues: 1) Urban noise pollution, 2) wildfires and 3) phenological shifts. The report urges the need for urgent attention to address the triple planetary crisis of climate change, pollution and biodiversity loss.

Source: The triple planetary crisis: Forging a new relationship between people and the earth (unep.org)

Wildfires will be more frequent, larger and intense due to climate change: UNEP -ForumIAS Blog

Q.76)

Ans) a

Exp) Option a is the correct answer.

Coking coal is an essential input for production of iron and steel. The largest single use of coal in the steel industry is as a fuel for the blast furnace and for the production of metallurgical coke for reduction of iron ore or for injection with the hot blast.

**Statement 1 is correct:** Coking coal and steel sector have high correlation with each other. Coking coal is mainly used in manufacturing of steel through blast furnace route. Domestic coking coal is a high ash coal (mostly between 18% - 49%) and it is not suitable for direct use in the blast furnace. Therefore, coking coal is washed to reduce the ash percentage and it is blended with imported coking coal (<9% ash) before utilization in the blast furnace.

**Statement 2 is correct:** India possesses large deposits of coking coal in the Jharia region of Jharkhand, most of it remains unexplored due to continuous fire in the mining areas.

**Jharia coalfield is a large coal field located in the east of India in Jharia, Jharkhand.** Jharia represents the largest coal reserves in India having estimated reserves of 19.4 billion tonnes of coking coal.

**Statement 3 is incorrect:** Currently, India imports most of its coking coal from Australia ( and not from United states of America). Though Australia has agreed to meet India's demand for coking coal, talks are also on with suppliers in Brazil and a few central Asian countries. India's coking coal imports during the April-December period of FY22 were recorded at 37.132 million tonnes, up 0.41% over the corresponding period of the previous year, according to data sourced from the Indian Ports Association (IPA).

Source: <https://www.livemint.com/news/india/india-seeks-alternatives-for-russian-coking-coal-imports-11645814163205.html>

<https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1778758>

Q.77)

Ans) d

Exp) Option d is the correct answer.

**The Greater one-horned rhino is the largest of the rhino species.** Once widespread across the entire northern part of the Indian sub-continent, rhino populations plummeted as they were hunted for sport or killed as agricultural pests. This pushed the species very close to extinction and by the start of the 20th century; around 200 wild greater one-horned rhinos remained.

**Option 1 is correct.** A census was conducted in Assam's rhino habitats earlier in March. **The Orang National Park recorded an increase of 24 rhinos over the figure of 101 in 2018.** There was no incident of poaching in the 78.81 sq. km park on the northern bank of the Brahmaputra river during this period.

**Option 2 is correct:** The rhino counts at **Pobitora Wildlife Sanctuary stands at 107 comprising 30 males, 50 females, and 27 calves.** With a notified area of 38.81 sq km, Pobitora Wildlife Sanctuary harbors the highest density of rhino population. Since 2014, there is no instance of poaching at Pobitora Wildlife Sanctuary.

**Option 3 is correct:** The **population of one-horned rhinoceros in Jaldapara and Gorumara in North Bengal has gone up.** The total count of the animal's stands at 291. According to the report, the count has gone up in both the forests in North Bengal in comparison to the last census, the report of which was released in the year 2015. **The rhino population in Gorumara has increased from 49 to 52.** Bengal has the second highest population of rhinoceros after Assam.

**Option 4 is correct:** **Jaldapara National Park in West Bengal's Alipurduar district** has registered a rise of 55 one-horned rhinos in the last three years, taking the current headcount to 292. The number of rhinos was 237 in 2019 and the national park added 18-19 rhinos to its population every year.

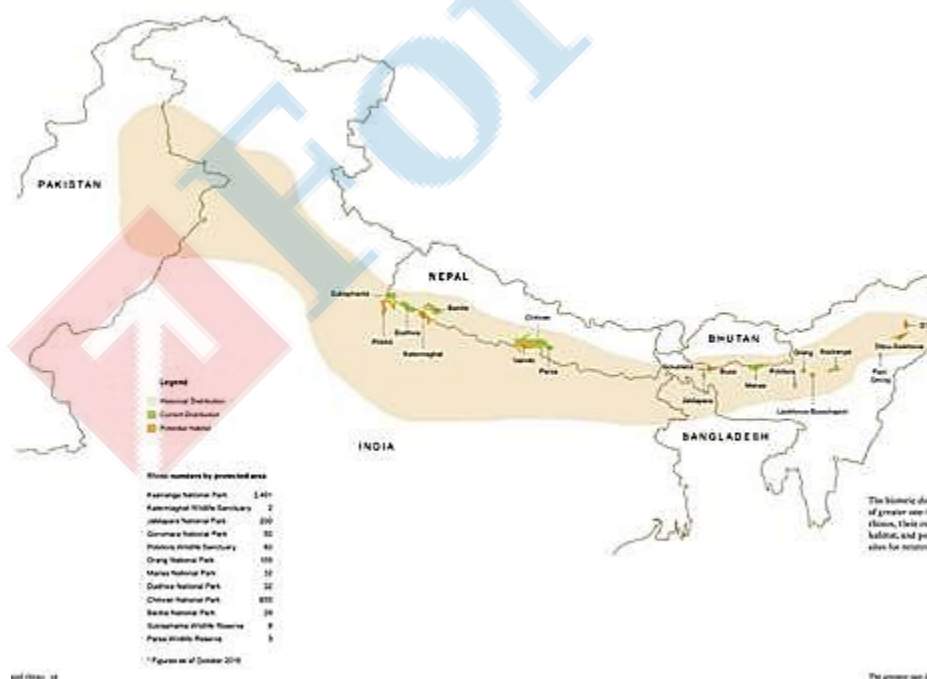


Fig. Population distribution of the Greater One Horned Rhino

Source: <https://www.worldwildlife.org/species/greater-one-horned-rhino>  
<https://www.ndtv.com/india-news/292-one-horned-rhinos-in-west-bengals-jaldapara-national-park-2855179>  
<https://theprint.in/india/assam-rhino-population-in-pobitora-increases-by-5-total-count-at-107/885794/>  
<https://www.thehindu.com/news/national/other-states/kaziranga-rhino-population-increases-by-200/article65270358.ece>  
<http://www.millenniumpost.in/kolkata/population-of-one-horned-rhinos-in-jaldapara-gorumara-goes-up-358523>

Q.78)

Ans) c

Exp) Option c is the correct answer.

The 2021 Conference of Parties (COP 26) for the UN Climate Change Conference was hosted by the UK in partnership with Italy, in Glasgow, UK.

**Statement 1 is incorrect:** The United Nations Climate Change Conference, COP19 held in Warsaw, Poland in 2013 established the Warsaw International Mechanism for Loss and Damage. It was associated with Climate Change Impacts (Loss and Damage Mechanism), to address loss and damage associated with impacts of climate change. It addresses extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change at COP19 (November 2013) in Warsaw, Poland.

**Statement 2 is incorrect:** The recently concluded UN Climate Change Conference (COP 26) in Glasgow, the **Beyond Oil and Gas Alliance (BOGA) initiative was launched**. It is a diplomatic initiative led by **Denmark and Costa Rica** to bring together ambitious governments **committed to phasing out oil and gas production**. **India is not a signatory to this initiative**.

**Statement 3 is correct:** The COP26 climate change conference signed Glasgow Climate Pact. It aims to restrict harmful emissions to limit global warming to **1.5 degrees above pre-industrial levels**. The Glasgow Pact was finally adopted by 197 parties. **The agreement is not legally binding**.

India, China and several other developing countries, including Iran, Venezuela and Cuba, objected to this provision that called upon countries to accelerate “efforts towards the phase-out of unabated coal power and inefficient fossil fuel subsidies”.

Source: <https://economictimes.indiatimes.com/industry/energy/oil-gas/what-does-an-alliance-to-end-oil-and-gas-mean-for-india/articleshow/88074093.cms?from=mdr>

<https://indianexpress.com/article/explained/explained-key-takeaways-cop26-glasgow-climate-pact-7621847/>

Q.79)

Ans) d

Exp) Option d is the correct answer.

**About 61 percent of the world's 356 turtle species** are threatened or already extinct, and the decline could have ecological consequences. Thus, the topic becomes important from exam point of view as various turtles and their threatening conditions are often seen in news.

**Statement 1 is correct:** Turtles play major roles in **ecosystem food webs** because they can be **herbivores, omnivores and carnivores**. They range from **specialists, or feeding on one to a few food sources, to generalists, feeding on a wide range of items**. Their diverse feeding habits allow them to influence the structure of other communities in their habitat.

**Statement 2 is correct:** Turtles can be **important in dispersing the seeds of dozens of plant species**. Some turtle species may even be the primary seed dispersal agents for specific plants. As not all seeds are destroyed by the digestive tract. In fact, there are specific seeds that exhibit higher rates of germination after being eaten and passed.

**Statement 3 is correct:** **Some Turtles are aquatic scavengers** that play a key **ecological role during fish kills by consuming carcasses**, and possibly reducing the harmful effects of carrion decomposition on water quality. Turtles are important scavengers in freshwater systems, but their global declines mean that this role is being lost slowly.

In the 1980s, India recognised this issue and reintroduced about 40,000 turtles into the Ganges River to address its pollution problem of decomposing human remains.

Source: Scavenging by threatened turtles regulates freshwater ecosystem health during fish kills | Scientific Reports (nature.com)

Where have all the turtles gone, and why does it matter? (uga.edu)

Q.80)

Ans) b

Exp) Option b is the correct answer.

The Commission for Air Quality Management in the National Capital Region and Adjoining Areas Bill, 2021, was recently passed by Parliament. The Commission has been set up for Air Quality Management in National Capital Region and Adjoining Areas for better co-ordination, research, identification and resolution of problems surrounding the air quality index and for matters connected therewith or incidental thereto.

**Statement 1 is incorrect:** Under Section 4 of the **Water (Prevention and Control of Pollution) Act, 1974** and Section 6 of the **Air (Prevention and Control of Pollution) Act, 1981** the **Central Pollution Control Board (CPCB)** is empowered to perform the **functions of the State Pollution Control Board for all Union Territories**. However, Section 4(4) of the Water (Prevention and Control of Pollution) Act, 1974 and Section 6 of the Air (Prevention and Control of Pollution) Act, 1981 provides that CPCB may delegate all or any of its powers and functions of a State Board in a UT under the said Acts to such person or body of persons as the Central Government may specify.

**Statement 2 is correct:** Apart from consolidating all agencies that monitored, investigated and planned mitigation of air pollution in the region, **The commission for Air Quality management has replaced the Supreme Court-appointed Environment Pollution (Prevention and Control) Authority (EPCA)** which had been running for 22 years. Over the years, the EPCA's powers had been waning. While dissolving the body, the Centre felt that the EPCA had become redundant and had been ineffective in addressing issues related to air pollution. The EPCA also did not have penal provisions that the commission will now have.

**Statement 3 is correct:** The **Commission for Air Quality Management** is the most powerful air pollution monitoring body set up by the Centre to date. The **rulings by the commission on air pollution will override anything contained in any other law**. The powers of the commission will also supersede that of any other body in matters of air pollution. Therefore, in **cases where conflict may arise between orders or directions issued by the other state governments**, state pollution control boards or even the Central Pollution Control Board, **the orders of the commission will prevail**. The Commission will have the power to take measures, issue directions and entertain complaints "for the purpose of protecting and improving the quality of air in the National Capital Region"

Source: <https://www.dpcc.delhigovt.nic.in/about#gsc.tab=0>

<https://indianexpress.com/article/explained/delhi-air-quality-commission-explained-7444052/>

Q.81)

Ans) a

Exp) Option a is the correct answer.

**Biodiversity** is the **abundance of life on Earth** and its **variability**. Typically, biodiversity is a representation of variation at the level of biology, plants, and habitats. Closer to the equator, which is the outcome of the warm atmosphere and relatively high productivity, terrestrial biodiversity is typically greater. Biodiversity is not uniformly spread on Earth and is highest in tropical areas.

**Option a is correct:** First and most important reason is that **Tropical latitudes receives more solar power than temperate zones, resulting in high productivity and high diversity of biodiversity**.

**Option b is incorrect:** During the ice age, **temperate areas were vulnerable to glaciations(not tropics)**, whereas **tropical regions stayed undisturbed**, contributing to a rise in species diversity in the area.

**Option c is incorrect:** There are **fewer seasonal changes in tropical regions** and they **have a more or less stable climate**. This encourages the specialization of the niche and hence the high wealth of animals.

**Option d is incorrect:** The presence of higher number of river does not necessarily contribute to the higher biodiversity.

Source: Class 12<sup>th</sup> NCERT Biology Chapter: Biodiversity and Conservation

Q.82)

Ans) c

Exp) Option c is the correct answer.

The Sangha was the religious order of the Buddhists. It was a well organised and powerful institution which popularized Buddhism.

**Option a is incorrect:** The Sangha was **governed by democratic principles** and was empowered to enforce discipline amongst its members. There was a code of conduct for the monks and nuns and they were bound to obey it. The Sangha had the power to punish the erring members.

**Option b is incorrect:** Membership was open to all persons, irrespective of caste, and including Sudras and Slaves.

**Option c is correct:** Initially **Buddha was not in favour of admitting women in the Sangha**. However he admitted them at the repeated requests of his chief disciple Ananda and his foster mother Mahapajapati Gotami.

**Option d is incorrect:** **Criminals, lepers and persons affected by infectious diseases were not** given admission into the Sangha.

Knowledge Base:

On admission, the monks had to ceremonially shave their head and wear yellow or saffron robes. Monks were expected to go on a daily round in order to preach Buddhism and seek alms. During the four months of the rainy season they took up a fixed abode and meditated. This was called the retreat or '**vasa**'. The Sanghas also promoted education among the people. Unlike Brahmanism people of different orders of the society had entry to education. Naturally the non-Brahmins who were deprived of education got access to education in Buddhism and thus education reached wider sections of the society.

Source: <https://egyankosh.ac.in/bitstream/123456789/20141/1/Unit-17.pdf>

Q.83)

Ans) d

Exp) Option d is the correct answer.

**Statement 1 is incorrect.** Canals share 24% of total irrigated area whereas the well and tube wells share 63% of the total irrigated area in 2014-15. Thus wells and tube wells share more irrigated area than Canals.

**Statement 2 is incorrect.** The share of canal irrigated area in total irrigated area has **decreased** since independence.

**Statement 3 is incorrect.** Micro irrigation covers **only 19% of irrigated area** in India which is much less than other countries. It is the slow application of water as tiny streams or miniature spray on, above, or below the soil by surface drip, subsurface drip, bubbler and micro-sprinkler systems. **The emitters are connected** to a water delivery line through low-pressure delivery.

**Statement 4 is incorrect.** Well Irrigation is common in alluvial plains of the country except the deserts of Rajasthan. **The Tank irrigation is more in the rocky plateau area of the country**, because here rainfall is uneven and highly seasonal. The Eastern Madhya Pradesh, Chhattisgarh, Orissa, Interiors of Tamil Nadu and some parts of Andhra Pradesh have more land under tank irrigation.

Source: [https://krishi.icar.gov.in/jspui/bitstream/123456789/34362/1/irrigation\\_rajni\\_preprint.pdf](https://krishi.icar.gov.in/jspui/bitstream/123456789/34362/1/irrigation_rajni_preprint.pdf)

Page-2,3

Q.84)

Ans) d

Exp) Option d is the correct answer.

Batteries are one of the most important and expensive components of electric vehicles (EVs). The vast majority of EVs use lithium-ion (Li-ion) batteries, which harness the properties of minerals and elements to power the vehicles.

Battery minerals refers to minerals used in rechargeable batteries. **This includes lithium, nickel, cobalt, graphite, manganese, alumina, tin, tantalum, magnesium and vanadium.** The rapid uptake of electric

vehicles and battery-based energy storage systems around the world is driving global demand for lithium-ion batteries. Electric vehicle and battery manufacturers are securing sources of minerals, materials and components to meet this increase in demand.

Source:

<https://www.mining.com/web/ranked-top-25-nations-producing-battery-metals-for-the-ev-supply-chain/>

<https://www.cmewa.com.au/about/wa-resources/battery-minerals/>

<https://earthworks.org/fact-sheet-battery-minerals-for-the-clean-energy-transition/>

Q.85)

Ans) c

Exp) Option c is the correct answer.

**Statement a is correct.** Black carbon warms the Earth by absorbing heat in the atmosphere and by **reducing albedo (the ability to reflect sunlight) when deposited on snow and ice.** It is the strongest absorber of sunlight and heats the air directly.

**Statement b is correct. Brown Carbon** is brown smoke released by the **combustion of organic matter or biomass burning.** Biomass burning (possibly domestic wood burning) is shown to be a major source of brown carbon. It coexists with black carbon when released in the atmosphere. Both Black and Brown carbon aid to the Global Warming and pollution.

**Statement c is incorrect.** Black carbon is a **short-lived carbon pollutant** which remains in the atmosphere **only for days to weeks** before it descends as rain or snow. Black carbon, commonly known as soot, is a form of particulate air pollutant, produced from incomplete combustion. It consists of pure carbon. **Black carbon (BC)** is a component of fine particulate matter ( $PM \leq 2.5 \mu m$  in aerodynamic diameter). Black carbon consists of **pure carbon in several linked forms.** It is formed through the **incomplete combustion of fossil fuels, biofuel, and biomass**, and is emitted in both anthropogenic and naturally occurring soot.

**Statement d is correct.** A recent study by IIT-Kanpur has highlighted that in terms of mass, brown carbon is 10 times more than black carbon. **The absorption capacity of black carbon is 50 times more than brown carbon.** It suggests that Black carbon was able to absorb about 70 percent of light in 24 hours, while brown carbon – independent in nature – had nearly 15 percent potential to warm the atmosphere by absorbing light.

Source: <https://www.thehindu.com/sci-tech/energy-and-environment/IIT-team-tracks-brown-carbon%E2%80%99s-effect-on-atmospheric-warming/article16703349.ece>

<https://aerosols.univie.ac.at/research/research-interests/black-and-brown-carbon-in-atmospheric-aerosols/>

<https://www.jagranjosh.com/current-affairs/brown-carbon-can-warm-atmosphere-1480325807-1>

Q.86)

Ans) d

Exp) Option d is the correct answer.

A variety of food and nonfood crops are grown in different parts of the country depending upon the variations in soil, climate and cultivation practices.

**Statement 1 is correct:** Tea is a plantation crop used as beverage. It is **grown over undulating topography** of hilly areas. The tea plant grows well in **tropical and sub-tropical climates** endowed with **deep and fertile well-drained soil, rich in humus and organic matter.** Tea bushes require **warm and moist frost-free climate all through the year.** Frequent showers evenly distributed over the year ensure continuous growth of tender leaves. Tea is a labor-intensive industry. It requires abundant labour as well.

**Statement 2 is correct:** There are **two important wheat-growing zones** in the country – **the Ganga-Satluj plains in the northwest** and **black soil region of the Deccan.** The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh.

**Statement 3 is correct:** Rabi crops are sown in winter from **October to December** and harvested in summer from **April to June.** Some of the important rabi crops are **wheat, barley, peas, gram and mustard.** Availability of precipitation during winter months due to the **western temperate cyclones** helps in the success of these crops.

Source: NCERT Class 10<sup>th</sup> Geography : Chapter-4 Agriculture

Q.87)

Ans) a

Exp) Option a is the correct answer.

**Brinjal, Jackfruit and Ginger** are known to be native to Indian subcontinent.

The **potato is native to the Peruvian-Bolivian Andes**. It was cultivated in South America by the Incas as early as 1,800 years ago. **Chili peppers originated in Bolivia** and were first cultivated in Mexico. After the Columbian Exchange, many cultivars of chili pepper spread around the world, used for both food and traditional medicine. **Bell peppers originated in Mexico, Central America, and South America**. Peppers were named by Christopher Columbus and Spanish explorers who were searching for peppercorn plants to produce black pepper. Columbus took samples of a wide variety of peppers back to Europe where they became quite popular.

Source: <https://sg.news.yahoo.com/eight-food-that-are-native-to-india-071853105.html>

[http://www.geacindia.gov.in/resource-documents/biosafety-regulations/resource-documents/Biology\\_of\\_Brinjal.pdf](http://www.geacindia.gov.in/resource-documents/biosafety-regulations/resource-documents/Biology_of_Brinjal.pdf)

[https://hort.purdue.edu/newcrop/morton/jackfruit\\_ars.html](https://hort.purdue.edu/newcrop/morton/jackfruit_ars.html)

<https://www.cabi.org/isc/datasheet/57537>

Q.88)

Ans) a

Exp) Option a is the correct answer.

**Satellite internet** is **wireless internet beamed down from satellites** orbiting the Earth. It's a lot different from land-based internet services like cable or DSL, which transmit data through wires.

**Statement 1 is correct: Satellite Internet works similarly to satellite TV**, is a wireless connection spread across satellite dishes located both in space and on the Earth.

In other words, it allows users to connect to the internet beamed from space onto a dish antenna, much like satellite TV.

Internet service providers send an internet signal to a satellite in space, which then comes back to the users and is captured by their satellite dish. The dish connects the computer to the internet signal. This process then reverses back to the internet service provider and is repeated every time.

**Statement 2 is incorrect:** Severe weather conditions can interrupt satellite transmission. Heavy rain or wind can also affect the satellite internet connection, potentially leading to slower speeds or an outage.

Source: <https://indianexpress.com/article/explained/oneweb-satellites-starlink-project-kuiper-7341366/>

[https://timesofindia.indiatimes.com/gadgets-news/explained-know-all-about-satellite-internet-and-how-it-](https://timesofindia.indiatimes.com/gadgets-news/explained-know-all-about-satellite-internet-and-how-it-operates/articleshow/89755420.cms#:~:text=A%20satellite%20internet%20connection%20uses,satellite%20that's%20circling%20the%20Earth.)

[operates/articleshow/89755420.cms#:~:text=A%20satellite%20internet%20connection%20uses,satellite%20that's%20circling%20the%20Earth.](https://timesofindia.indiatimes.com/gadgets-news/explained-know-all-about-satellite-internet-and-how-it-operates/articleshow/89755420.cms#:~:text=A%20satellite%20internet%20connection%20uses,satellite%20that's%20circling%20the%20Earth.)

Q.89)

Ans) a

Exp) Option a is the correct answer.

Agriculture has always been pivotal for Indian economy since independence. The gravity of the sector is due to the fact that nearly half of population of the country derives its livelihood from the agriculture.

**Statement 1 is correct:** At the time of independence, **around 72 percent of total working population** was engaged in agriculture. Currently the **number stands at around 50%**. This highlight the importance of agricultural sector in the economy and lives of people.

**Statement 2 is incorrect:** While the pace of expansion of the gross sown area has slowed down, the net sown area is showing a negative trend. The gross sown area increased by 40 per cent between 1951 and 1991-92. This growth rate reduced to 10 per cent between 1991 and 2010-11. **But the net sown area has been decreasing since 1991, after expanding by 20 per cent between 1951 and 1991.**

**Statement 3 is incorrect:**

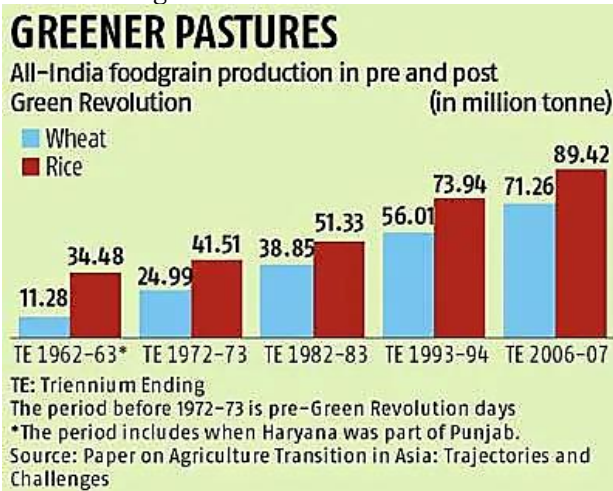
One of the most remarkable achievements of the Green Revolution is the significant increase in the production of two major crops, i.e. rice and wheat.

The production of rice has increased from 34.48 million tonnes in Triennium Endings (TE) 1962-63 to 112.47 million tonnes in TE 2018-19.

Same time, the wheat production also increased substantially from 11.28 million tonnes in TE 1962-63 to 99.18 million tonnes in TE 2018-19.

Even though the production rate of wheat was more than rice, rice production in terms of tonnes was larger.

Rice production is at 122.27 million tonnes in the 2020-21 crop year. Wheat production is 111.32 million tonnes during 2021-22.



**Statement 4 is correct:**

The share of agricultural products/Agriculture and Allied Sectors in Gross Domestic Product (GDP) of the country was 51.9 per cent in 1950-51.

The share of agriculture in GDP was 19.9 per cent in 2020-21.

Source: <https://www.icfa.org.in/assets/doc/reports/farmers-journey.pdf>

<https://www.intechopen.com/chapters/67311>

<https://www.downtoearth.org.in/news/agriculture/agri-share-in-gdp-hit-20-after-17-years-economic-survey-75271#:~:text=The%20share%20of%20agriculture%20in%20GDP%20increased%20to%2019.9%20per,cent%20was%20in%202003%2D04.>

**Q.90)**

**Ans) a**

**Exp) Option a is the correct answer.**

**Statement 1 is correct:** The Convention on Wetlands of International Importance, more commonly known as the Ramsar Convention, is an international agreement promoting the conservation and wise use of wetlands. **It is the only global treaty that focuses specifically on wetlands.** The treaty was negotiated through the 1960s by countries and non-governmental organisations concerned about the increasing loss and degradation of wetland habitat for migratory waterbirds.

**Statement 2 is incorrect:** The Ramsar Convention on Wetlands defines wetlands as “areas of marsh, fen, peat land or water, **whether natural or artificial**, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.” Ex - **Harike Lake is a man-made wetland** and a Ramsar site.

**Statement 3 is correct:** Recently, the Ramsar Convention on Wetlands has designated **Khijadia Bird Sanctuary near Jamnagar in Gujarat and Bakhira Wildlife Sanctuary** in Uttar Pradesh as wetlands of international importance.

**Statement 4 is incorrect:** By the number of sites, **maximum of the Ramsar sites is in Uttar Pradesh, which is home to 10 sites.** By area, West Bengal (having 4,35,500 hectares of sites) has the maximum area

of Ramsar sites, while Tripura (having 240 hectares) and Uttarakhand (having 444 hectares) have the least area occupied by the Ramsar sites.

Source: Frequently asked questions (FAQs) on Ramsar sites in India | India Water Portal

Q.91)

Ans) b

Exp) Option b is the correct answer.

When two or more crops are grown on the same land simultaneously, it is known as mixed cropping.

**Statement 1 is correct:** As **monocropping leads to overextraction of soil nutrients**, the **mixed cropping prevents such occurrences**. It also leads to higher up take of nutrients of the crops. Certain Crops such as legumes also recharge important nutrients. Thus, Mixed Cropping can help in increasing soil fertility.

**Statement 2 is incorrect:** There is **no evidence suggesting that the best result in Mixed Cropping is observed when the fertilizers are not used**. The practice of mixed cropping **does not exclude the use of fertilizers** in the crops.

**Statement 3 is incorrect:** Two or more crops are grown all at the same time in a field. If by chance one crop fails, the others crop covers the risk of total crop failure. **Usually, a long duration crop is grown with a short duration one so that both get sufficient nutrition at the time of maturity**. Then water and nutrient requirement are also different. Generally, a leguminous crop is grown along with the main crop.

**Statement 4 is correct:** During the process of mixed cropping, the crop seeds are combined and scattered in the fields or they are planted in separate rows as their maturation time and harvesting time are different. Growing 2 or more crops simultaneously planted in separate rows is known as intercropping. On the other hand, when **2 or more crops can be grown simultaneously without any specific row arrangement in mixed cropping**.

Source: <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/mixed-cropping>

<https://eos.com/blog/intercropping/>

[http://agri-bsc.kkwagh.edu.in/uploads/department\\_course/Cropping\\_system.pdf](http://agri-bsc.kkwagh.edu.in/uploads/department_course/Cropping_system.pdf)

<https://www.nios.ac.in/media/documents/secscicour/English/Chapter-31.pdf>

<https://www.nios.ac.in/media/documents/333courseE/21.pdf>

Q.92)

Ans) c

Exp) Option c is the correct answer

**Statement 1 is incorrect:** Mica is a naturally occurring non-metallic mineral that is based on a collection of silicates. **It is Andhra Pradesh (not Rajasthan) which has the highest reserve of Mica** in the Country. **Andhra Pradesh** has around **41 per cent** of total reserve, which is followed by **21% in Rajasthan**.

**Statement 2 is incorrect:** Presently, diamond fields of India are grouped into four regions:

- 1) South Indian tract of Andhra Pradesh, comprising parts of Anantapur, Kadapa, Guntur, Krishna, Mahabubnagar and Kurnool districts;
- 2) Central Indian tract of Madhya Pradesh, comprising Panna belt;
- 3) Behradin-Kodawali area in Raipur district and Tokapal, Dugapal, etc. areas in Bastar district of Chhattisgarh;
- 4) Eastern Indian tract mostly of Odisha, lying between Mahanadi and Godavari valleys.

**Statement 3 is correct:** **Odisha is the largest Bauxite producing state** in the country. It almost produces more than half of the country's total production. Bauxite is the principal ore of aluminum production and very important non-ferrous metal.

**Statement 4 is correct:** The Public Sector Unit (PSU), Oil and Natural Gas Corporation is the largest crude oil and natural gas Company in India, contributing around 72 per cent to Indian domestic production.

Source: [https://ibm.gov.in/writereaddata/files/04042020121307Mica\\_19\\_AR.pdf](https://ibm.gov.in/writereaddata/files/04042020121307Mica_19_AR.pdf)

<https://mopng.gov.in/en/exp-and-prod/production>

<https://coal.gov.in/en/major-statistics/coal-reserves>

<https://www.livemint.com/news/india/india-seeks-alternatives-for-russian-coking-coal-imports-11645814163205.html>

<https://www.indiatoday.in/business/story/explained-why-india-is-facing-a-shortage-of-coal-1859729-2021-10-01>

Q.93)

Ans) b

Exp) Option b is the correct answer.

Seismic waves are waves of energy that travel through the Earth's layers and are a result of earthquakes, volcanic eruptions, magma movement, large landslides and large human-made explosions.

**Statement 1 is incorrect:** Primary waves (P-Waves) are called so because they are the **fastest among the seismic waves** and hence are recorded first on the seismograph. These waves are of **relatively high frequency** and are the **least destructive (not most)** among the earthquake waves.

**Statement 2 is correct:** Earthquake waves get recorded in seismographs located at far off locations. However, **there exist some specific areas where the waves are not reported. Such a zone is called the 'shadow zone'.** The **shadow zone of P-waves appears as a band around the earth between 105° and 145°** away from the epicentre. The **shadow zone of S-waves is not only larger in extent** but it is also a little **over 40 per cent of the earth surface.**

Knowledge Base: **P-waves** are also called as the

- 1) longitudinal waves because the displacement of the medium is in the same direction as, or the opposite direction to, (parallel to) the direction of propagation of the wave;
- 2) compressional waves because they produce compression and rarefaction when travelling through a medium; or
- 3) pressure waves because they produce increases and decreases in pressure in the medium.

**Secondary waves** (secondary they are recorded second on the seismograph) **or S-waves** are also called as transverse waves or shear waves or distortional waves.

The body waves interact with the surface rocks and generate new set of waves called surface waves (**long or L-waves**). These waves move only along the surface.

Source: <https://ncert.nic.in/ncerts/l/kegy203.pdf>

Q.94)

Exp) Option a is the correct answer.

**Gross Domestic Product** is the **final value of all goods and services produced by a country** in a given time period. It is widely used as an indicator of economic progress. The value of GDP is computed by multiplying the quantity of goods and services produced with their market price. The computation of GDP follows the conventions adopted by the National Income Accounting System.

**Statement 1 is correct:** **Gross Domestic Product** refers to output produced in the country, **irrespective of the ownership of the factors of production.** Therefore, the production of a Car for a company owned by any foreign national is included in India's GDP.

**Statement 2 is incorrect:** The salaries of employees working in embassy of America in India will not be included in the Gross Domestic Product of India as the embassy of America is not a part of the domestic territory of India.

**Statement 3 is incorrect:** Profits earned by Indian company from its branches in Germany will not be included as these profits are earned from their production/services in foreign territory.

**Statement 4 is incorrect:** Transfer payments are a part of personal income and thus, are not considered as part of the GDP so as to prevent counting the same money twice.

**Gross Domestic Product does not include:** Sales of goods that were produced outside our domestic borders, Sales of used goods, Illegal sales of goods and services (which we call the black market), **Transfer payments made by the government** and Intermediate goods that are used to produce other final goods.

Source: <https://economictimes.indiatimes.com/wealth/personal-finance-news/what-is-a-countrys-gross-domestic-product/articleshow/67205772.cm>

Q.95)

Ans) a

Exp) Option a is the correct answer.

The **basic aim of creating Eco-Sensitive Zones (ESZ)** is to **regulate certain activities** around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

**Statement 1 is incorrect:** Eco-Sensitive Zones or Ecologically Fragile Areas are **areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries**. In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even **area beyond 10 km width can also be included** in the eco-sensitive zone.

**Statement 2 is correct:** Eco-Sensitive Zones are **notified by MoEFCC, Government of India** under **Environment Protection Act 1986**.

**Statement 3 is incorrect:** Ongoing **agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology** for all activities, all are permitted inside ESZ.

**Knowledge Base: Prohibited activities in ESZ:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.

**Regulated activities in ESZ:** Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.

Source: <https://pib.gov.in/newsite/PrintRelease.aspx?relid=154962>

<https://www.conservationindia.org/resources/moef-releases-new-guidelines-for-eco-sensitive-zones-eszs-around-protected-areas>

Q.96)

Ans) b

Exp) Option b is the correct answer.

**Statement a is correct:** There is no peak with the elevation of more than 3000 meters in Western Ghats. The highest peak in Western Ghats is Anaimudi with an elevation of around 2695 meters.

**Statement b is incorrect:** The Cold Desert of India is situated in the Himalayas and stretches from Ladakh (A union territory) and the state of Jammu and Kashmir, in the north to Kinnaur (in the state of Himachal Pradesh) in the south.

**Statement c is correct:** Banni Grasslands Reserve or Banni grasslands form a belt of arid grassland ecosystem on the outer southern edge of the desert of the marshy salt flats of Rann of Kutch in Kutch District, Gujarat State, India. They are known for rich wildlife and biodiversity.

**Statement d is correct:** Loktak Lake is the largest freshwater lake in Northeast India. It is an internationally important, Ramsar designated, freshwater wetland system in the state of Manipur, India.

Source: <https://www.britannica.com/place/Anai-Peak>

<https://whc.unesco.org/en/tentativelists/6055/>

<https://bannigrassland.org/banni/>

<http://www.manipuritourism.gov.in/in-around-loktak-lake/>

Q.97)

Ans) b

Exp) Option b is the correct answer.

The Chola Empire was divided into three major administrative units called Central Government, Provincial government and local government. **Uttaramerur inscriptions** throws light on the **administration of the Cholas**.

**Pair 1 is correctly matched:** **Karanmai** were essentially **tenancy and cultivation rights** given by the Chola Administration. The grants also often conferred **administrative rights** which were called **Miyatei**.

**Pair 2 is correctly matched:** **Kurram** was the **lowest unit of Chola administration**. In the Chola empire, Kingdom was divided into **Mandalams (or provinces)** and each mandalam divided into **Valanadus (Commissionary)** and **Nadus (Districts)** and **Kurram (group of villages)**.

**Pair 3 is incorrectly matched:** **Variyams** does not refer to fallow land but an **executive body** in Chola Administration. The **village administration was carried on effectively by Variyams** who used to be the male members of the society.

**Pair 4 is correctly matched: Brahmadeya was tax free land gift** either in form of single plot or whole villages donated to **Brahmanas** in the **Chola Administration**. It was initially practiced by the ruling dynasties and was soon followed up by the chiefs, merchants, feudatories. **Land grants to Temples** were called **Devdanas**.

Source: <https://egyankosh.ac.in/bitstream/123456789/22027/1/Unit-18.pdf>

Q.98)

Ans) d

Exp) Option d is the correct answer.

Electromagnetic radiation (EMR) consists of waves of the electromagnetic (EM) field, propagating through space, carrying electromagnetic radiant energy.

**Statement 1 is correct: Electromagnetic radiation (EMR) includes radio waves, microwaves, infrared, (visible) light, ultraviolet, X-rays, and gamma rays.** All of these waves form part of the electromagnetic spectrum.

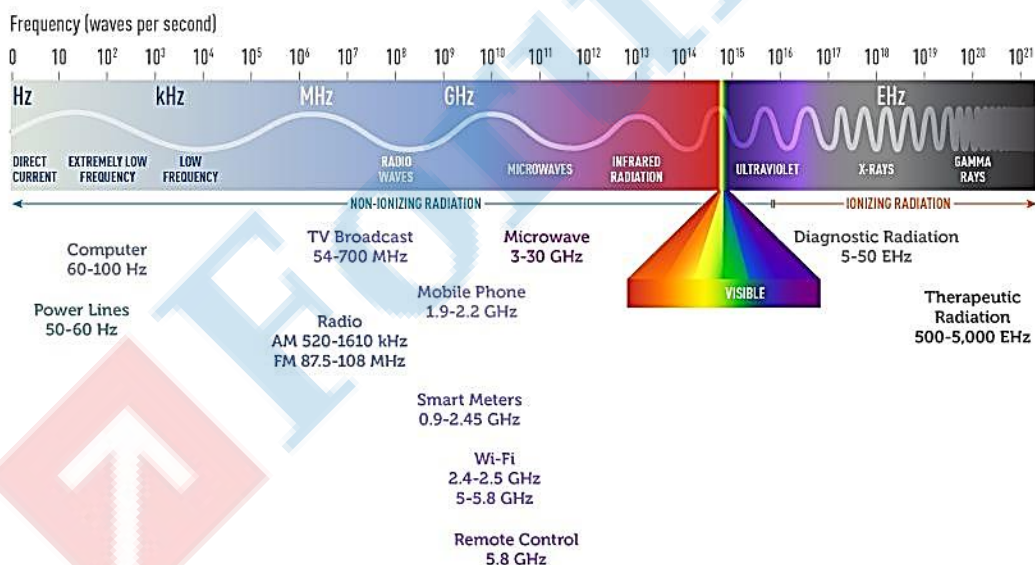
**Statement 2 is correct: The cellphone towers emit Electromagnetic radiation in the range of 300 MHz to 300 GHz** which are also known as **microwaves**. The globally **permissible safe limit** of radiation level is **0.5 milliwatt per meter square**.

**Statement 3 is correct: Electromagnetic radiation from Cell phone and cell tower affects the birds, environment. When birds are exposed to weak electromagnetic fields, they disorient** and fly in all directions, which harm their natural navigational abilities. Furthermore, in a recent study, the **microwaves (300 MHz to 300 GHz) emitted by cell phone towers and handsets** has been found to be **responsible for damaging eggs and embryos of sparrows**.

Knowledge

Base:

## ELECTROMAGNETIC SPECTRUM



Source: <https://www.cancer.org/cancer/cancer-causes/radiation-exposure/cellular-phone-towers.html>

Q.99)

Ans) d

Exp) Option d is the correct answer.

**Statement 1 is correct.** Heavy grazing reduces the mulch cover over the soil, so does the humus cover. This produces puddling of the surface layer. **In turn it reduces the infiltration of water into the soil and**

accelerates run off, resulting in soil erosion. Lack of humus cover makes soil more vulnerable to wind erosion.

**Statement 2 is correct.** Due to heavy grazing, the quality of grasslands deteriorates rapidly, **the mulch cover of the soil reduces**, and **microclimate becomes dry**. Due to reduction of mulch cover, the soil and grasslands becomes **readily prone to invasions by xerophytic plants and borrowing animals**.

**Statement 3 is correct.** Heavy grazing changes and disrupts the stratification and periodicity of the primary producers. It thus disrupts the energy flow in the ecosystem, which results in a **breakdown of the biogeochemical cycles** of water, carbon and nitrogen.

Q.100)

Ans) b

Exp) Option b is the correct answer.

**Option a is incorrect:** The **primary difference** between Cheetah and Tiger is that **they belong to different Genus**. **Cheetah** belongs to **Acinonyx**, whereas **Tiger** belongs to **Panthera**. Cheetah is tan with round black spots. Tiger has black stripes all over the body.

**Option b is correct:** **Cheetahs are the only big cat that cannot roar**, and are the fastest animal in the world, whereas, the **Tiger** is the **largest wild cat animal** in the world.

**Option c is incorrect:** **Cheetahs (not tigers) cannot climb trees** and have **poor night vision**. **Tigers** are solitary hunters – they hunt at night; they **can see well in the dark**.

**Option d is incorrect:** **Cheetahs** are listed as “**Vulnerable**” by the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species. On the other hand **Tigers** are listed as “**Endangered**” by the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species.

Source: <https://www.discoverwildlife.com/animal-facts/mammals/why-can-only-big-cats-roar/>

<https://seaworld.org/animals/all-about/cheetah/communication/>

<https://www.iucnredlist.org/species/15955/50659951>

<https://www.iucnredlist.org/species/219/50649567>