



INSIGHTSIAS
SIMPLIFYING IAS EXAM PREPARATION

INSTA STATIC QUIZ

AUGUST 2020

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PREPARATION

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1. Polity

1) Consider the following statements about the Government of India Act 1858.

1. It abolished the East India Company Rule in India.
2. It changed the entire structure of government in India prevailing earlier.
3. As per the Act, Indian Government was to be supervised and controlled in England.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: c)

This significant Act was enacted in the wake of the Revolt of 1857. The act known as **the Act for the Good Government of India**, abolished the East India Company rule, and transferred the powers of government, territories and revenues to the British Crown.

Features of the Act

1. It provided that India henceforth was to be governed by, and in the name of, Her Majesty. It **changed the designation of the Governor-General of India to that of Viceroy of India**. He (viceroy) was the direct representative of the British Crown in India. **Lord Canning thus became the first Viceroy of India**.
2. It ended the system of double government by **abolishing the Board of Control and Court of Directors**.
3. It created a new office, **Secretary of State for India**, vested with complete authority and control over Indian administration. The secretary of state was a member of the British cabinet and was responsible ultimately to the British Parliament.
4. It established a **15-member Council of India** to assist the secretary of state for India. The council was an advisory body. The secretary of state was made the chairman of the council.
5. It constituted the **secretary of state-in-council** as a body corporate, capable of suing and being sued in India and in England.

The Act of 1858 was, however, largely confined to the **improvement of the administrative machinery** by which the Indian Government was to be supervised and controlled in England. **It did not alter in any substantial way the system of government that prevailed in India.**

2) Which of the following Parliamentary committees are not chaired by Speaker?

1. Public Accounts Committee
2. Business Advisory Committee
3. Estimates Committee
4. Rules Committee
5. Committee on Public Undertakings
6. General Purposes Committee

Select the correct answer code:

- a) 2, 4, 6
- b) 1, 3, 5
- c) 1, 2, 4
- d) 4, 5, 6

Solution: b)

The Speaker appoints the chairman of all the parliamentary committees of the Lok Sabha and supervises their functioning. He himself is the chairman of the **Business Advisory Committee, the Rules Committee and the General Purpose Committee**.

3) What are the possible actions an Election Commission can take against candidates and political parties?

1. Election Commission cannot bar candidates or leaders from campaigning for specified periods.
2. The EC monitors the adherence of political parties and candidates to the 'Model Code of Conduct'.
3. It can postpone elections to any constituency, cancel an election already notified, but cannot abrogate or annul an election already held.

Which of the above statements is/are incorrect?

- a) 1, 2
- b) 2 only
- c) 1, 3
- d) 3 only

Solution: c)

What are the possible actions EC can take against candidates and parties?

The EC monitors the adherence of political parties and candidates to the 'Model Code of Conduct'.

If the violations are also offences under election law and the criminal law of the land, the EC has the power to recommend registration of cases against the offenders.

However, for some violations — such as canvassing for votes during a period when electioneering is barred, making official announcements while the MCC is in force, and making appeal to voters on sectarian grounds — the EC has the power to advise or censure candidates, in addition to directing registration of cases.

In some cases, as recent incidents would show, the **EC may bar candidates or leaders from campaigning for specified periods.**

Asking individuals to leave a constituency or barring entry into certain areas are other powers that the EC may exercise. These powers are not necessarily traceable to any provision in law, but are generally considered inherent because of the sweeping and plenary nature of the EC's responsibility under the Constitution to ensure free and fair elections.

Its powers extend to postponing elections to any constituency, cancelling an election already notified, and **even to abrogate or annul an election already held.**

4) Consider the following statements about the office of 'whip'.

1. The office has been established by Rules of Business in each House of Parliament.
2. Only the ruling party is allowed to have a whip in each house of Parliament.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: d)

The office of 'whip' is mentioned neither in the Constitution of India nor in the Rules of the House nor in a Parliamentary Statute. It is based on the conventions of the parliamentary government.

Every political party, whether ruling or Opposition has its own whip in the Parliament. He is appointed by the political party to serve as an assistant floor leader.

He is charged with the responsibility of ensuring the attendance of his party members in large numbers and securing their support in favour of or against a particular issue.

He regulates and monitors their behaviour in the Parliament. The members are supposed to follow the directives given by the whip. Otherwise, disciplinary action can be taken.

5) The Constitution lays down which of the following conditions for the governor's office or selection to the Governor's office?

1. The Governor should not belong to the state where is appointed.
2. The Governor's appointment must be made after consulting the chief Minister of the state.

3. A serving Governor cannot be a member of either House of Parliament or a House of the state legislature.

Select the correct answer code:

- a) 1, 2
- b) 3 only
- c) 1, 3
- d) 2, 3

Solution: b)

Article 157 and Article 158 of the Constitution of India specify eligibility requirements for the post of governor. They are as follows:

A governor must:

- be a [citizen of India].
- be at least 35 years of age.
- not be a member of the either house of the parliament or house of the state legislature.
- not hold any office of profit.

Additionally, two conventions have also developed over the years.

First, he should be an outsider, that is, he should not belong to the state where he is appointed, so that he is free from the local politics.

Second, while appointing the governor, the president is required to consult the chief minister of the state concerned, so that the smooth functioning of the constitutional machinery in the state is ensured.

However, both the conventions have been violated in some of the cases

6) Consider the following statements.

1. The First Lok Sabha met on the eve of the first republic day.
2. India ceased to be a British dominion immediately post-enactment of the constitution.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

First Lok Sabha met in 1952 Under GV Mavalankar.

The Indian Independence Act 1947 merely converted India into a British dominion. It ceased to be dominion only after 26th January 1950.

Till 1952, the Constituent assembly itself functioned as the law-making body.

The Lok Sabha was duly constituted for the first time on 17 April 1952 after the first General Elections.

7) Consider the following statements regarding the functions of National Commission for STs with respect to the protection and welfare of STs.

1. Measures to be taken over conferring ownership rights in respect of minor forest produce to STs living in forest areas
2. Measures to be taken to promote the traditional practice of shifting cultivation
3. Measures to be taken to safeguard rights of the tribal communities over water resources

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: c)

In 2005, the President specified the following functions of the Commission in relation to the protection, welfare and development and advancement of the STs:

- (i) **Measures to be taken over conferring ownership rights in respect of minor forest produce to STs living in forest areas**
- (ii) **Measures to be taken to safeguard rights of the tribal communities over mineral resources, water resources etc., as per law**
- (iii) Measures to be taken for the development of tribals and to work for more viable livelihood strategies
- (iv) Measures to be taken to improve the efficacy of relief and rehabilitation measures for tribal groups displaced by development projects
- (v) Measures to be taken to prevent alienation of tribal people from land and to effectively rehabilitate such people in whose case alienation has already taken place
- (vi) Measures to be taken to elicit maximum cooperation and involvement of tribal communities for protecting forests and undertaking social afforestation
- (vii) Measures to be taken to ensure full implementation of the Provisions of Panchayats (Extension to the Scheduled Areas) Act, 1996
- (viii) Measures to be taken to **reduce and ultimately eliminate the practice of shifting cultivation by tribals** that lead to their continuous disempowerment and degradation of land and the environment

8) Consider the following statements regarding the financial accountability of the legislature to the executive.

1. The CAG submits audit reports to the President.
2. Public Accounts Committee examines CAG reports.
3. Public Accounts Committee submits the audit report of CAG to the President after due examination.

Which of the above statements is/are correct?

- a) 2 only
- b) 1, 3
- c) 1, 2
- d) 2, 3

Solution: c)

The **CAG submits three audit reports to the President**—audit report on appropriation accounts, audit report on finance accounts, and audit report on public undertakings.

The President lays these reports before both the Houses of Parliament. After this, the **Public Accounts Committee examines them and reports its findings to the Parliament.**

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.

9) Consider the following statements.

1. In *Indra Sawhney vs Union of India*, the Supreme Court held that reservations under Article 16(4) could only be provided at the time of entry into government service but not in matters of promotion.
2. In *Nagaraj* case the Supreme court said that the State is bound to make reservation for the SCs and STs in promotions.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

Indra Sawhney vs Union of India and M Nagaraj case:

- In its landmark 1992 decision in **Indra Sawhney vs Union of India**, the Supreme Court had held that **reservations under Article 16(4) could only be provided at the time of entry into government service but not in matters of promotion.**
- It added that the principle would operate only prospectively and not affect promotions already made and that reservation already provided in promotions shall continue in operation for a period of five years from the date of the judgment. It also ruled that the creamy layer can be and must be excluded.
- On June 17, 1995, Parliament, acting in its constituent capacity, adopted the seventy-seventh amendment by which clause (4A) was inserted into Article 16 to enable reservation to be made in promotion for SCs and STs. The validity of the seventy-seventh and eighty-fifth amendments to the Constitution and of the legislation enacted in pursuance of those amendments was challenged before the Supreme Court in the **Nagaraj case**.
- Upholding the validity of Article 16 (4A), the court then said that it is an enabling provision. **“The State is not bound to make reservation for the SCs and STs in promotions.** But, if it seeks to do so, it must collect quantifiable data on three facets — the backwardness of the class; the inadequacy of the representation of that class in public employment; and the general efficiency of service as mandated by Article 335 would not be affected”.

10) Consider the following statements with respect to powers of Election Commission.

1. Election Commission can *disqualify candidates who commit electoral malpractices*.
2. The Constitution empowers the Election Commission to decide whether a candidate has incurred

disqualification by holding an office of profit.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

What are the limitations of the EC's powers?

- The EC does not have the power to disqualify candidates who commit electoral malpractices. At best, it may direct the registration of a case.
- The EC also does not have the power to deregister any political party. However, the Constitution empowers the EC to decide whether a candidate has incurred disqualification by holding an office of profit under the appropriate government, or has been declared an insolvent, or acquired the citizenship of a foreign state.
- When a question arises whether a candidate has incurred any of these disqualifications, the President of India or Governor has to refer it to the EC. The poll panel's decision on this is binding.

11) For simultaneous elections to be implemented, changes need to be made in which of the following related articles of the Constitution?

1. Duration of Houses of Parliament
2. Dissolution of Lok Sabha by the President
3. President's Rule

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

If the Centre wants to hold simultaneous polls, five amendments need to be made in the Constitution. **Article 83**, which deals with the duration of Houses of Parliament, will have to be tweaked, along with **Article 85** (dissolution of Lok Sabha by the President), **Article 172** (duration of state legislatures), **Article 174** (dissolution of state assemblies) and **Article 356** (President's Rule), to facilitate simultaneous polls

“One year one election” can be executed by amending Section 15 of the **Representation of People Act 1951**.

112) Consider the following statements regarding privilege motion.

1. A member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or of a committee thereof.
2. The Speaker/Chairperson is the only deciding authority on the privilege motion.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

Rule No 222 in Chapter 20 of the Lok Sabha Rule Book and correspondingly Rule 187 in Chapter 16 of the Rajya Sabha rulebook governs privilege. It says that a member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or of a committee thereof. The rules however mandate that any notice should be relating to an incident of recent occurrence and should need the intervention of the House.

What is the role of the Speaker/Rajya Sabha Chair?

The **Speaker/RS chairperson is the first level of scrutiny of a privilege motion**. The Speaker/Chair can decide on the privilege motion himself or herself or refer it to the **privileges committee of Parliament**. If the Speaker/Chair gives consent under Rule 222, the member concerned is given an opportunity to make a short statement.

13) Consider the following statements regarding Electronically Transmitted Postal Ballot System (ETPBS).

1. ETPBS is developed by Election Commission of India with the help of Centre for Development of Advanced Computing (C-DAC).
2. It is a fully secured system, having two layers of security.
3. Service Voter and the wife of a Service Voter who ordinarily resides with him is eligible for ETPBS.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

Electronically transmitted Postal Ballot System (ETPBS):

- ETPBS is developed by Election Commission of India with the help of Centre for Development of Advanced Computing (C-DAC), for the use of the Service Voters.
- It is a fully secured system, having two layers of security. Secrecy is maintained through the use of OTP and PIN and no duplication of casted Electronically Transmitted Postal Ballot (ETPB) is possible due to the unique QR Code.
- Persons working in paramilitary forces and the military and government officials deployed in diplomatic missions outside India are classified as Service Voters.

Class of Electors who are eligible for ETPBS:

- Service Voters, other than those who opt for proxy voting (Classified Service Voters).
- The wife of a Service Voter who ordinarily resides with him.
- Overseas Voters.

14) Which of the following are the functions of Parliamentary committees.

1. Examine ministerial budgets and consider Demands for Grants.
2. Examine Bills referred to by the Chairman of Rajya Sabha or the Speaker of Lok Sabha.
3. Exercise the views of a political party on a proposed bill through the party whip.

Which of the above statements is/are correct?

- a) 1, 3
- b) 1, 2
- c) 2, 3
- d) 1, 2, 3

Solution: b)

What Parliamentary committees do?

- Support Parliament's work.
- Examine ministerial budgets, consider Demands for Grants, analyse legislation and scrutinise the government's working.
- Examine Bills referred to by the Chairman, Rajya Sabha or the Speaker, Lok Sabha.
- Consideration of Annual Reports.
- Consideration of national basic long term policy documents presented to the House and referred to the Committee by the Chairman, Rajya Sabha or the Speaker, Lok Sabha.

15) Consider the following statements regarding Estimates committee

1. It suggests alternative policies in order to bring about efficiency in administration.
2. It estimates the Budget before it is voted by the Parliament.
3. It cannot question the policy laid down by the Parliament

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 2, 3
- d) 1, 3

Solution: d)

The functions of the estimates committee are:

1. To report what economies, improvements in organisation, efficiency and administrative reform consistent with the policy underlying the estimates, can be affected.
2. **To suggest alternative policies in order to bring about efficiency and economy in administration**
3. To examine whether the money is well laid out within the limits of the policy implied in the estimates
4. To suggest the form in which the estimates are to be presented to Parliament.

However, the effectiveness of the role of the committee is limited by the following:

- (a) **It examines the budget estimates only after they have been voted by the Parliament, and not before that.**
- (b) **It cannot question the policy laid down by the Parliament.**
- (c) Its recommendations are advisory and not binding on the ministries.
- (d) It examines every year only certain selected ministries and departments. Thus, by rotation, it would cover all of them over a number of years.
- (e) It lacks the expert assistance of the CAG which is available to the Public Accounts Committee.
- (f) Its work is in the nature of a post-mortem.

16) The first Law Commission was established, under the Chairmanship of Lord Macaulay which recommended codification of the Penal Code and the Criminal Procedure Code, by the

- a) Government of India Act 1935
- b) Charter Act of 1833
- c) Law Commission Act, 1967
- d) Government of India Act of 1919

Solution: b)

Law Reform in the ancient period was ad hoc and not institutionalised.

However, since the third decade of the nineteenth century, Law Commissions were constituted by the Government from time to time.

The first law commission was established in 1834 under the Charter Act of 1833.

Thereafter, the second, third and fourth Law Commissions were constituted in 1853, 1861 and 1879 respectively helped adapt English Laws to Indian conditions.

The Indian Code of Civil Procedure, the Indian Contract Act, the Indian Evidence Act, the Transfer of Property Act etc. are products of the labour of the first four Law Commissions.

The First Law Commission of Independent India was established in 1955 with the then Attorney-General of India, Mr. M. C. Setalvad, as its Chairman.

17) Consider the following statements regarding the constitution of India?

1. It is a set of written rules that are accepted by all people living together in a country.
2. It specifies how the government will be constituted and the distribution of decision-making power therein.
3. It expresses the aspirations of the people about creating a good society.

Which of the above statements is/are correct?

- a) 1 only
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: d)

Constitution is the supreme law that determines the relationship among citizens and also the relationship between the citizens and government.

- It generates a degree of trust and coordination that is necessary for different kind of people to live together;
- It specifies how the government will be constituted, for e.g. by democratic elections.
- It lays down limits on the powers of the government and tells us what the rights of the citizens are; and
- It expresses the aspirations of the people, for e.g. by preamble and DPSP.

18) The writ of “Quo Warranto” can be issued to address which of the following?

- a) If an official is not doing her duties properly
- b) If a legislator holds such office which makes him ineligible to become an MP
- c) If someone has been detained illegally
- d) If a lower court has usurped illegal jurisdiction

Solution: b)

Quo warranto means “by what warrant”? This means that Supreme Court and High Court may issue the writ which restrains the person or authority to act in an office which he / she is not entitled to.

This writ is applicable to the public offices only and not to private offices.

19) Consider the following statements.

1. There is no code of Conduct for members of either house of Parliament in India.
2. Other than the UK and US, no other country prescribes a code of conduct for the Parliamentarians.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

A Code of Conduct for members of Rajya Sabha has been in force since 2005; there is no such code for Lok Sabha.

Codes of conduct for high constitutional functionaries and representatives of the people have been discussed for long. A code for Union ministers was adopted in 1964, and state governments were advised to adopt it as well. A conference of Chief Justices in 1999 resolved to adopt a code of conduct for judges of the Supreme Court and High Courts — this 15-point 'Re-instatement of Values in Judicial Life' recommended that serving judges should maintain an air of "aloofness" in their official and personal lives.

In the **UK**, a code of conduct for MPs was "prepared pursuant to the Resolution of the House of 19 July 1995". The **Canadian House of Commons** has a Conflict of Interest and Ethics Commissioner with powers to examine violations of the Conflict of Interest Code at the request of another Member or by Resolution of the House or on his own initiative. **Germany** has had a Code of Conduct for members of the Bundestag since 1972; the **US** has had a Code since 1968. **Pakistan** has a Code of Conduct for members of the Senate.

20) Consider the following statements regarding Governor's legislative powers.

1. If a bill passed by the state legislature endangers the position of the state high court, the Governor must reserve the bill for consideration of the President.
2. If a bill sent by Governor for the reconsideration of the State legislature is passed again without amendments, the Governor is under no constitutional obligation to give his assent to the bill.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

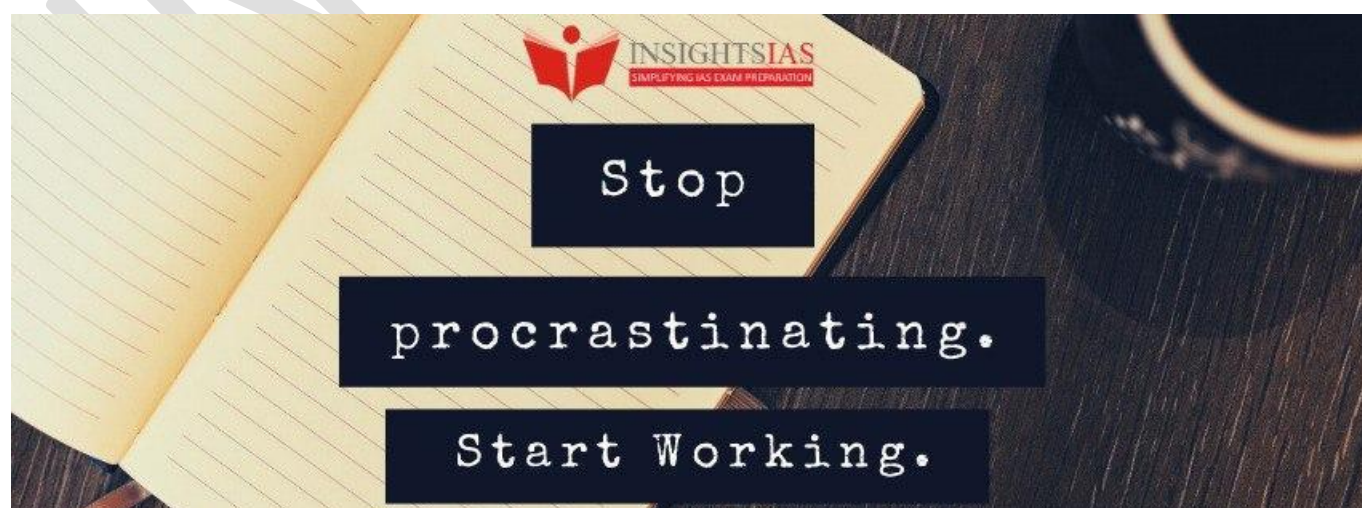
Solution: a)

When a bill is sent to the governor after it is passed by state legislature, he can:

- (a) Give his assent to the bill, or
- (b) Withhold his assent to the bill, or
- (c) Return the bill (if it is not a money bill) for reconsideration of the state legislature. However, if the bill is passed again by the state legislature with or without amendments, **the governor has to give his assent to the bill**, or
- (d) Reserve the bill for the consideration of the president. **In one case such reservation is obligatory, that is, where the bill passed by the state legislature endangers the position of the state high court.** In

addition, the governor can also reserve the bill if it is of the following nature:

- (i) Ultra-vires, that is, against the provisions of the Constitution.
- (ii) Opposed to the Directive Principles of State Policy.
- (iii) Against the larger interest of the country.
- (iv) Of grave national importance.
- (v) Dealing with compulsory acquisition of property under Article 31A of the Constitution.



2. Geography

1) Consider the following statements.

1. Cotton is a drought resistant crop ideal for arid climates.
2. Food products are also derived from cotton like edible oil and animal feed from the seed.
3. India is the only country to grow all four species of cultivated cotton.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

Cotton is one of the most important fibre and cash crop of India and plays a dominant role in the industrial and agricultural economy of the country.

Cotton is a drought – resistant crop ideal for arid climates, it occupies just 2.1 % of the world's arable land, yet it meets 27% of the world's textiles need.

In addition to its fibre used in textiles and apparel, **food products are also derived from cotton like edible oil and animal feed from the seed.**

India is the only country in the world where all the four cultivated species are grown on commercial scale.

2) Equator passes through which of the following countries?

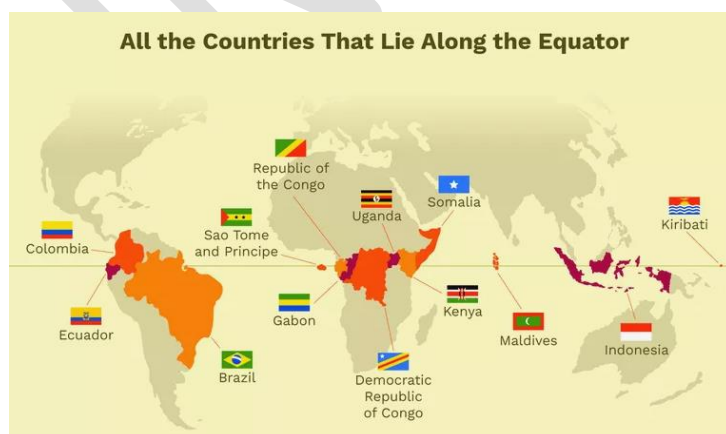
1. Indonesia
2. Maldives
3. Somalia
4. Brazil
5. Kenya
6. Ecuador

Select the correct answer code:

- a) 1, 2, 3, 4, 5
- b) 2, 3, 4, 5, 6
- c) 1, 3, 4, 5, 6
- d) 1, 2, 3, 4, 5, 6

Solution: d)

The equator passes through 13 countries: Ecuador, Colombia, Brazil, Sao Tome & Principe, Gabon, Republic of the Congo, Democratic Republic of the Congo, Uganda, Kenya, Somalia, Maldives, Indonesia and Kiribati.



3) Tropic of Cancer passes through which of the following countries?

1. India
2. Pakistan
3. Bangladesh
4. China
5. Myanmar

Select the correct answer code:

- a) 1, 3, 4, 5
- b) 1, 2, 3, 4
- c) 1, 2, 4, 5
- d) 1, 2, 3, 4, 5

Solution: a)

Moving east of the Prime Meridian, the Tropic of Cancer passes through the following Countries:

- Algeria
- Niger
- Libya
- Egypt
- Saudi Arabia
- UAE (Abu Dhabi)
- Oman
- India
- Bangladesh
- Myanmar
- China
- Taiwan
- Mexico
- Bahamas
- Western Sahara
- Mauritania
- Mali

4) Which of the following techniques for soil conservation is best used in coastal and flat dry areas?

- a) Sheltered belts
- b) Terrace farming
- c) Countour barriers
- d) Countour ploughing

Solution: a)

All techniques mentioned above in b, c and d are used in hilly terrains. For e.g. terrace farming is used to cut flat steps in hilly farms to reduce water erosion and make farm cultivable. They are not suited to flat dry (where water erosion is not significant) and coastal areas.

In the coastal and dry regions, rows of trees are planted to check the wind movement to protect soil cover. These are known as shelter belts. These trees also yield valuable resources and supplement farm income.

5) Apart from Latitude and Altitude, which of the following factors affect the climate of a region?

1. Pressure and wind systems
2. Continentality
3. Ocean currents

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3

d) 1, 2, 3

Solution: d)

There are six major controls of the climate of any place. They are: latitude, altitude, pressure and wind system, distance from the sea (continentality), ocean currents and relief features.

6) In geological history of the earth, Panthalasa was a

- a) Super Ocean present in Paleozoic to Mesozoic transition.
- b) Super Ocean present in Pre – Cambrian Era
- c) Super Continent present in Pre – Cambrian Era
- d) Super Continent present in Paleozoic to Mesozoic transition.

Solution: a)

Panthalasa is a super ocean present in Paleozoic to Mesozoic transition.

7) Consider the following statements:

- 1. The soil develops on crystalline igneous rocks in areas of low rainfall.
- 2. They are generally poor in nitrogen, phosphorous and humus.
- 3. They are fertile when fine-grained and are poor in fertility when they are coarse-grained.

The above statements refer to:

- a) Laterite soil
- b) Black Soil
- c) Red and Yellow Soil
- d) None of the above

Solution: c)

Red soil develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern part of the Deccan Plateau. Along the piedmont zone of the Western Ghat, long stretch of area is occupied by red loamy soil. Yellow and red soils are also found in parts of Odisha and Chhattisgarh and in the southern parts of the middle Ganga plain. The soil develops a reddish colour due to a wide diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form. **The fine-grained red and yellow soils are normally fertile, whereas coarse-grained soils found in dry upland areas are poor in fertility.** They are generally poor in nitrogen, phosphorous and humus.

8) What is/are the difference(s) between troposphere and stratosphere?

- 1. Jet aircrafts fly in stratosphere, not in troposphere.
- 2. Stratosphere is the layer with auroras, not troposphere.
- 3. Most of the Weather patterns occur in the troposphere, not in stratosphere.

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: c)

Many jet aircrafts fly in the stratosphere because it is very stable.

Auroras are the result of disturbances in the magnetosphere caused by solar wind. These particles, mainly electrons and protons, precipitate into the upper atmosphere (thermosphere/exosphere).

The troposphere is the lowest layer of Earth's atmosphere, and is also where nearly all weather conditions take place.

9) Which of the following statements concerning atmosphere of the Earth is/are correct?

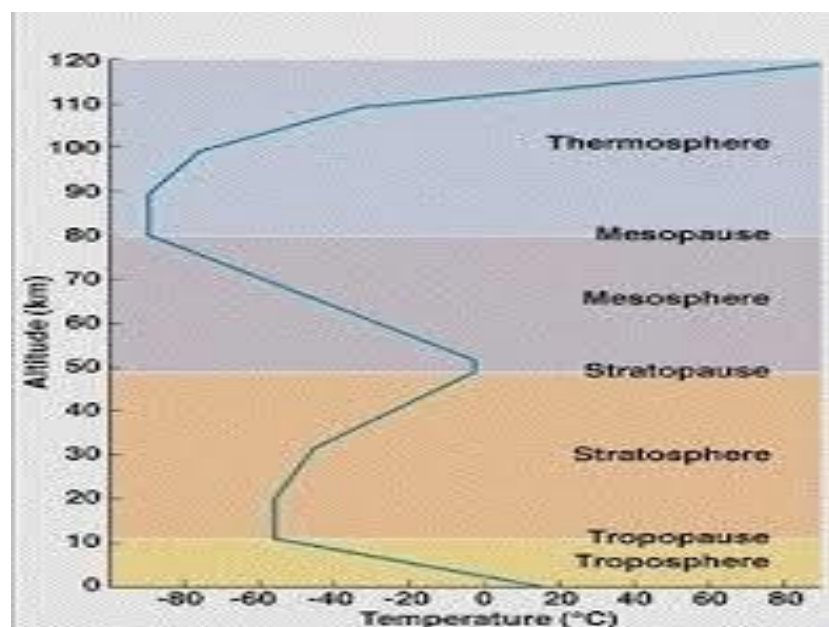
1. In stratosphere, temperature increases with altitude.
2. In mesosphere, temperature decreases with altitude.
3. The lowest temperature of the atmosphere is recorded in the upper part of mesosphere.
4. Tropopause is an isothermal zone.

Select the correct answer code:

- a) 1, 2
- b) 1, 2, 3
- c) 3, 4
- d) 1, 2, 3, 4

Solution: d)

All statements are correct.



The top of the mesosphere, called the mesopause, is the coldest part of Earth's atmosphere. Temperatures in the upper mesosphere fall as low as -101°C (172 K; -150°F), varying according to latitude and season.

An isothermal layer is defined as a vertical column of air having a constant temperature with height.

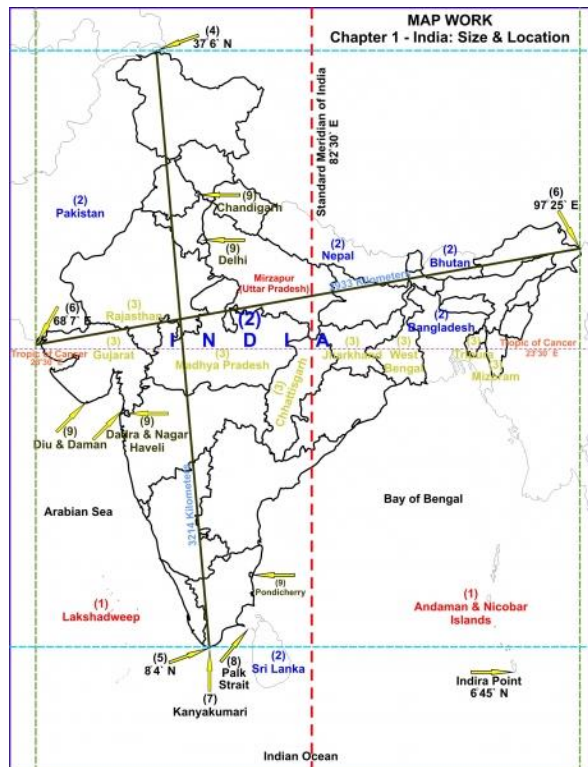
10) The standard time meridian of India passes through which of the following Asian countries?

1. China
2. Nepal
3. Sri Lanka
4. Bangladesh

Select the correct answer code:

- a) 1, 2
- b) 1, 2, 3
- c) 1, 2, 4
- d) 1, 4

Solution: a)



11) Which of the following can lead to/speed up Weathering of rocks

1. Seepage of water
2. Air Pollution
3. Frost action
4. Thermal stresses

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 2, 4
- c) 2, 3, 4
- d) 1, 2, 3, 4

Solution: d)

Water seeps into cracks and crevices in rock. If the temperature drops low enough, the water will freeze. When water freezes, it expands.

The ice then works as a wedge. It slowly widens the cracks and splits the rock. When ice melts, water performs the act of erosion by carrying away the tiny rock fragments lost in the split.

Weathering is a natural process, but human activities can speed it up.

For example, **certain kinds of air pollution increase the rate of weathering.** Burning coal, natural gas, and petroleum releases chemicals such as nitrogen oxide and sulfur dioxide into the atmosphere. When these chemicals combine with sunlight and moisture, they change into acids. They then fall back to Earth as acid rain.

Acid rain rapidly weathers limestone, marble, and other kinds of stone. The effects of acid rain can often be seen on gravestones, making names and other inscriptions impossible to read.

Thermal stress weathering results from the expansion and contraction of rock, caused by temperature changes. For example, heating of rocks by sunlight or fires can cause expansion of their constituent minerals. As some minerals expand more than others, temperature changes set up differential stresses that eventually cause the rock to crack apart.

12) In which of these regions you are most likely to find extreme variability in weather patterns?

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- a) Tropical rainforests
- b) Interiors of large continents
- c) Coastal regions
- d) Temperate plains near large water bodies

Solution: b)

Due to the absence of moderation effect of sea on climate, extreme temperatures are found in the Interiors of large continents. This effect is called **Continentality** which implies being surrounded by only land, leading to a reduced moderation effect of the seas.

Coastal regions will see the land and sea breeze moderating climate.

Similar can be said for plains that are near large water bodies.

Tropical regions do not see much variation in temperatures and precipitation.

13) Consider the following statements regarding Black Soils.

- 1. It is highly porous
- 2. It can be found in the Malwa Plateau
- 3. It is rich in potash, but poor in calcium carbonate.

Which of the above statements is/are correct?

- a) 1, 2
- b) 3 only
- c) 2 only
- d) 2, 3

Solution: a)

Black soil is also known as regur soils.

Black soil is ideal for growing cotton and is also known as black cotton soil.

The black soils are made up of extremely fine i.e. clayey material. They are well-known for their capacity to hold moisture.

They develop deep cracks during hot weather, which helps in the proper aeration of the soil.

They are rich in soil nutrients, such as calcium carbonate, magnesium, potash and lime. These soils are generally poor in phosphoric contents.

It is believed that climatic condition, along with the parent rock material, are the important factors for the formation of black soil.

This type of soil is typical of the Deccan trap (Basalt) region spread over northwest Deccan plateau and is made up of lava flows.

They cover the plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and extend in the south east direction along the Godavari and the Krishna valleys.

14) Which among the following Asian rivers flows eastwards and drains in the East China Sea?

- a) Yangtze
- b) Mekong
- c) Tumen
- d) Irrawaddy

Solution: a)



15) Consider the following statements:

1. Estuaries are more favourable than deltas for the siting of large ports.
2. Limestone vegetation in tropical regions is luxuriant because of the heavy rainfall all the year round.
3. Ria coasts, Fiord coasts, Estuarine coasts and Dalmatian coasts are examples for the coastline of emergence.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: a)

Coastlines of Emergence

These are formed either by an uplift of the land or by the lowering of the sea level. Bars, spits, lagoons, salt marshes, beaches, sea cliffs and arches are the typical features.

The east coast of India, especially its south-eastern part (Tamil Nadu coast), appears to be a coast of emergence. The west coast of India, on the other hand, is both emergent and submergent. The northern portion of the coast is submerged as a result of faulting and the southern portion, that is the Kerala coast, is an example of an emergent coast.

Coastlines of Submergence

A submerged coast is produced either by subsidence of land or by a rise in sea level.

Ria, fjord, Dalmatian and drowned lowlands are its typical features.

Limestone vegetation in tropical regions is luxuriant because of the heavy rainfall all the year round.

16) Which of the following pairs are correctly matched?

Mountain	Place
1. Mount Kilimanjaro	Africa
2. Mount Aconcagua	South America
3. Mount Sinabung	Indonesia
4. Mount Paektu	Philippines

Select the correct answer code:

- a) 1, 3, 4
- b) 1, 2, 3
- c) 1, 2, 4

d) 1, 2, 3, 4

Solution: b)

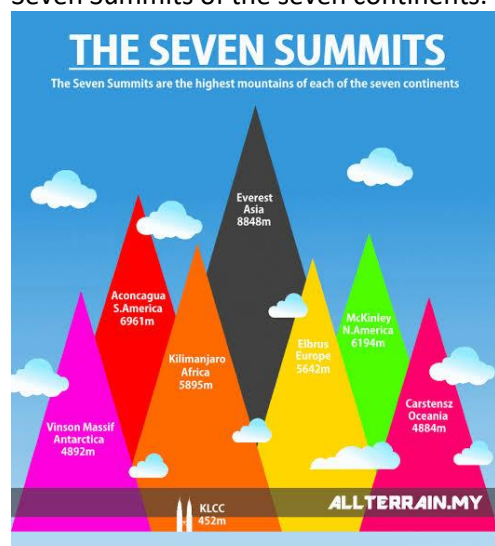
Indonesia's Mount Sinabung volcano erupted recently. The volcano became active in 2010, erupting after nearly 400 years of inactivity. Indonesia is home to many active volcanoes, due to its position on the "Ring of Fire", or the Circum-Pacific Belt, which is an area along the Pacific Ocean characterised by active volcanoes and frequent earthquakes. The Ring of Fire is home to about 75 per cent of the world's volcanoes and about 90 per cent of its earthquakes.

Mount Kilimanjaro is a dormant volcano in Tanzania.
It is the **highest mountain in Africa**.

Mount Paektu or Changbai (in Chinese) is a volcanic mountain that last erupted over 1,000 years ago.
Situated at the border between Democratic People's Republic of Korea and China.
At a height of about 9,000 feet, it is also the highest peak in the Korean peninsula.

Mt. Aconcagua

It is the highest peak of the Andes Mountains in **Argentina, South America**. The mountain is one of the so-called Seven Summits of the seven continents.



17) Consider the following statements.

1. A volcanic eruption takes place when magma formed when the earth's mantle melts, rises to the surface.
2. The explosivity of the volcano depends on the composition of the magma.
3. When the magma is runny and thin it usually leads to a violent explosion.

Which of the above statements is/are correct?

- a) 1, 3
- b) 2, 3
- c) 1, 2
- d) 1, 2, 3

Solution: c)

A volcano can be active, dormant or extinct. **An eruption takes place when magma (a thick flowing substance), formed when the earth's mantle melts, rises to the surface.** Because magma is lighter than solid rock, it is able to rise through vents and fissures on the surface of the earth. After it has erupted, it is called lava.

Not all volcanic eruptions are explosive, **since explosivity depends on the composition of the magma.** When the magma is runny and thin, gases can easily escape it, in which case, the magma will flow out towards the surface.

On the other hand, if the **magma is thick and dense, gases cannot escape it, which builds up pressure inside until the gases escape in a violent explosion.**

The most common cause of death from a volcano is suffocation, making people with respiratory conditions such as asthma and other chronic lung diseases especially susceptible.

Volcanic eruptions can result in additional threats to health such as floods, mudslides, power outages, drinking water contamination and wildfires.

Lava flows, however, rarely kill people, since they move slowly, giving enough time to escape.

18) Which of the following pairs are correctly matched?

Waterfalls	Location
1. Jog Falls	Karnataka
2. Barehipani Falls	Meghalaya
3. Thalaiyar Falls	Tamil Nadu
4. Nohkalikai Falls	Odisha

Select the correct answer code:

- a) 1, 3
- b) 1, 2, 3
- c) 1, 3, 4
- d) 1, 2, 3, 4

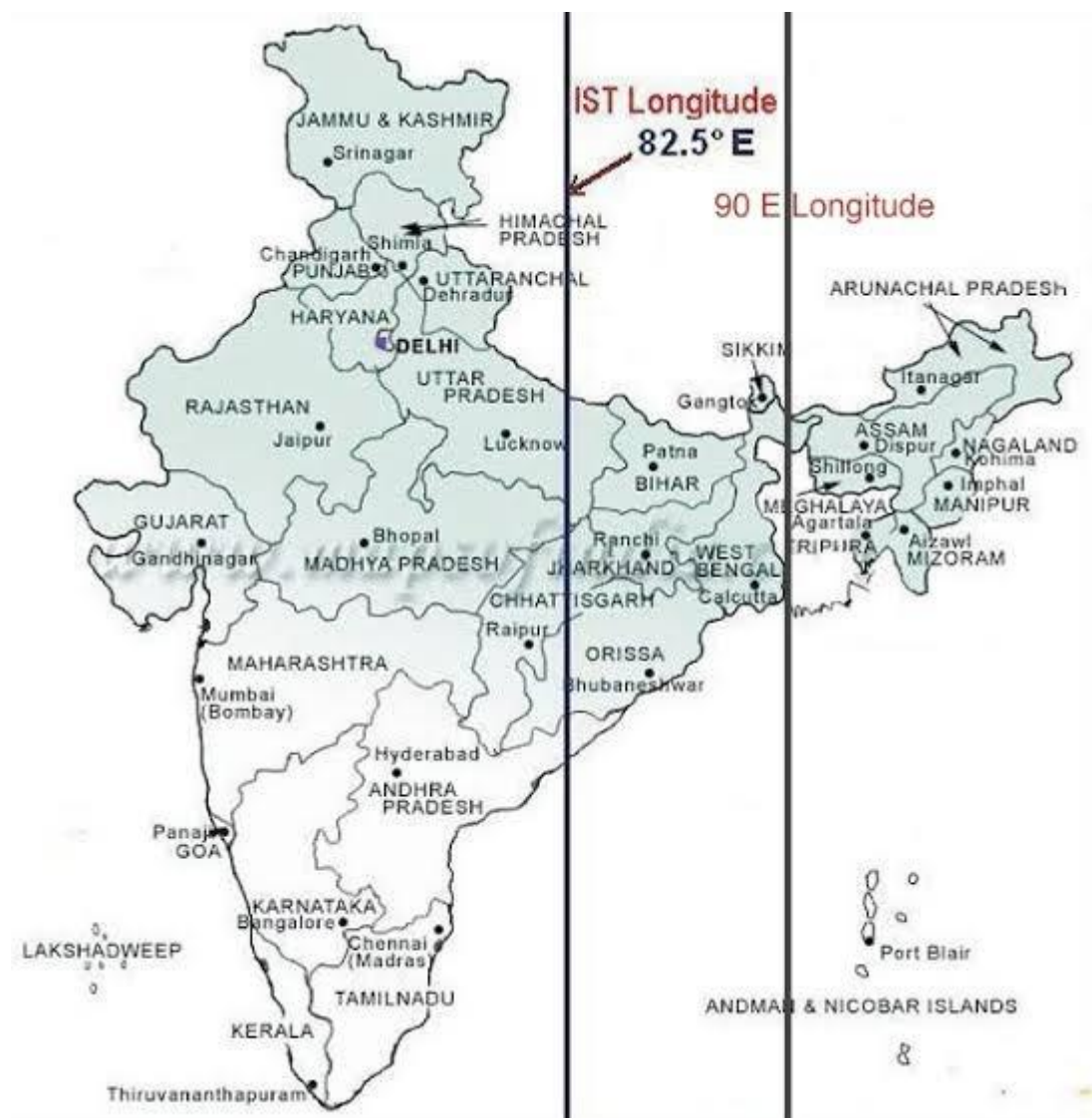
Solution: a)

Waterfall	Height	Location
Kunchikal Falls	455 metres (1,493 ft) ^[2]	Shimoga district, Karnataka
Barehipani Falls	399 metres (1,309 ft) ^[2]	Mayurbhanj district, Odisha
Nohkalikai Falls	340m (1115 feet) ^[2]	East Khasi Hills district, Meghalaya
Nohsngithiang Falls or Mawsmai Falls	315 metres (1,033 ft) ^[2]	East Khasi Hills district, Meghalaya
Dudhsagar Falls	310 m(1017 feet) ^[2]	Karnataka and Goa
Kynrem Falls	305 metres (1,001 ft) ^[2]	East Khasi Hills district, Meghalaya
Meenmutty Falls	300 m (984 feet) ^[2]	Wayanad district, Kerala
Thalaiyar Falls	297 metres (974 ft) ^[2]	Batlagundu, Dindigul district, Tamil Nadu
Barkana Falls	259 metres (850 ft) ^[2]	Shimoga district, Karnataka
Jog Falls	253 metres (830 ft) ^[2]	Shimoga district, Karnataka

19) In terms of longitudinal position, which of the following is located far away from the Indian Standard Meridian

- a) Lucknow
- b) Kanpur
- c) Nagpur
- d) Bengaluru

Solution: d)



20) Consider the following statements regarding Aurora or Northern lights.

1. Auroras are the glowing lights at high latitude.
2. Auroras can be normally observed in stratosphere.
3. Change in the atmospheric temperature cause Auroras.

Which of the above statement is/are correct?

- a) 1, 3
- b) 1 only
- c) 2, 3
- d) 1, 2, 3

Solution: b)

An aurora, sometimes referred to as polar lights, northern lights (aurora borealis) or southern lights (aurora australis), is a natural light display in the Earth's sky, predominantly seen in **the high latitude regions (around the Arctic and Antarctic).**

Auroras are produced when the **magnetosphere is sufficiently disturbed by the solar wind.** It usually occur in upper atmosphere (thermosphere/exosphere) due to Earth's magnetic field.

21) Why the Southern Hemisphere does not experience cold and harsh climate like the Siberia?

1. Relative absence of land in the Southern Hemisphere in the higher latitudes
2. Strong oceanic influence on the climate reduces the severity of winter

Which of the above statements is/are correct?

- a) 1 only

- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

The Siberian climate is conspicuously absent in the Southern Hemisphere because of the narrowness of the Southern Hemisphere in the high latitudes.

The strong oceanic influence reduces the severity of the winter and coniferous forests are found only on the mountainous uplands of Southern Chile, New Zealand, Tasmania and SE Australia.

22) Mineral extraction from several Himalayan regions is commercially unviable because of the

1. Complex rock structure of Himalayas
2. Rugged terrain and adverse climatic conditions

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

Despite such a large geographical spread, the Himalayan region seems poor in mineral resources. The **rugged terrain and adverse climatic conditions** definitely make exploration of minerals difficult and costly.

Also, in Himalayas, geological processes have led to major displacement of rock strata. This has disturbed the arrangement of rocks and made it complex, making Himalayas poor in mineral resources. However, some regions are rich in deposits.

23) Features of the youth stage of a river usually include

1. Stream divides are broad with marshes and swamps
2. Waterfalls and rapids may exist where hard rocks are found
3. Streams meander freely forming natural levees and ox-bow lakes

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 2, 3
- d) 1 only

Solution: a)

A river course goes over several phases of development or maturity. Each phase affects its major characteristics. The characteristics of each of the stages of landscapes developing in running water regimes may be summarised as follows:

Youth stage

- Few streams that with poor integration flowing through original slopes
- Shallow V-shaped valleys; deep gradients
- Stream divides are broad with marshes, swamps etc.
- Waterfalls and rapids may exist where hard rocks are there

Mature stage

- Plenty streams with good integration; mild gradients
- Deep V-shaped valleys
- Broader meandering floodplains
- Water divides turn sharper

- Waterfalls and rapids disappear

Old Stage

- Smaller tributaries flowing over gentle gradients
- Divides are broad and flat with lakes
- Streams meander freely forming natural levees, ox-bow lakes
- Most of the landscape is either at or above sea level.

24) Equatorial counter-currents are major surface flows that carry water eastward in the Atlantic, Indian, and Pacific Oceans. The factors that contribute to their flow includes:

1. Presence of Coriolis force
2. Tropical surface wind flow leading to piling of water near the equator

Select the correct answer code:

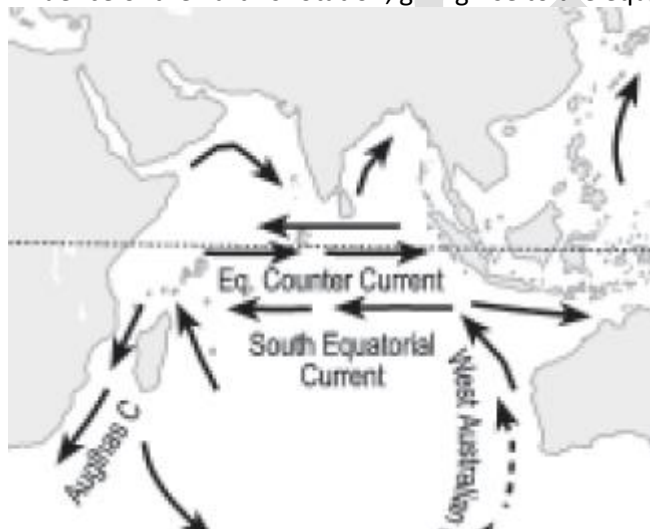
- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

They are located near the equator and are sandwiched between two westward-flowing currents, the North Equatorial Current and the South Equatorial Current. **Equatorial counter-currents are unique, in that they flow in the opposite direction of the surface winds.** The other major surface currents in the tropics flow in the same direction as the prevailing winds.

The equatorial counter-currents are thus driven by a distinct surface wind pattern in the tropics. Strong westward trade winds result in westward surface flow in most of the tropical Atlantic and Pacific Oceans. However, several hundred miles north of the equator the winds are much weaker, in comparison. The stronger winds to the south pile up water where the winds are weak.

As a result, the surface of the ocean can be up to 6 inches higher. The excess water flows eastward under the influence of the Earth's rotation, giving rise to the equatorial counter-currents.



25) Consider the following statements regarding Cyclones.

1. Cyclones are sustained by very *strong low-pressure areas at their core.*
2. Very few cyclones originate in the Arabian Sea, but they are relatively strong compared to those emerging in the Bay of Bengal.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

Cyclones are sustained by very *strong low-pressure areas at their core*. Winds in surrounding areas are forced to rush towards these low-pressure areas.

Though cyclones are common in the June, very few of them originate in the Arabian Sea. Most of them are found in the Bay of Bengal. In the last 120 years for which records are available, just about 14% of all cyclonic storms, and 23% of severe cyclones, around India have occurred in the Arabian Sea. **Arabian Sea cyclones are also relatively weak compared to those emerging in the Bay of Bengal.**



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3. Economy

1) Consider the following statements.

1. In India, bank nationalisation started under the Prime Minister Rajiv Gandhi.
2. The basic idea behind Lead Bank Scheme (LBS) was to have an 'area approach' for targeted and focused banking.
3. Narasimham Committee of 1991 recommended that banks should be free to practise commercial modes of operation, with profitability as the primary goal.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 2 only

Solution: c)

Bank nationalisation started under the then Prime Minister Indira Gandhi with nationalisation of 14 major lenders that accounted for 85 per cent of bank deposits in the country at that time. Six more banks were later nationalised in 1980. The core objective for nationalisation was to energise priority sectors at a time when the large businesses dominated credit profiles.

The Lead Bank scheme was introduced in 1969. Each district was assigned to one bank, where they acted as "pace-setters" in providing integrated banking facilities.

Changes post 1991:

- **Narasimham Committee of 1991 recommended** that monetary policy should be divorced from redistributionist goals. Instead, **banks should be free to practise commercial modes of operation, with profitability as the primary goal.**
- Taking the cue, the Reserve Bank of India allowed banks to open and close branches as they desired.
- Priority sector guidelines were diluted; banks were allowed to lend to activities that were remotely connected with agriculture or to big corporates in agri-business, yet classify them as agricultural loans.
- Interest rate regulations on priority sector advances were removed.

2) Consider the following statements regarding Cash reserve ratio (CRR).

1. The percentage of cash required to be kept in reserves, vis-a-vis a bank's total profits, is called the Cash Reserve Ratio.
2. Banks do not get any interest on the money that is with the RBI under the CRR requirements.
3. CRR helps in keeping inflation under control.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: b)

Cash reserve ratio (CRR) is a certain minimum amount of deposit that the commercial banks have to hold as reserves with the central bank.

The percentage of cash required to be kept in reserves, vis-a-vis a **bank's total deposits**, is called the Cash Reserve Ratio.

The cash reserve is either stored in the bank's vault or is sent to the RBI. **Banks do not get any interest on the money that is with the RBI under the CRR requirements.**

CRR helps in keeping inflation under control. At the time of high inflation in the economy, RBI increases the CRR, so that banks need to keep more money in reserves so that they have less money to lend further.

3) Which of the following are the factors considered behind the market determined exchange rates?

1. Net foreign currency inflows
2. Growth rate of the economy
3. Commodity dependence of the economy on global supplies
4. Forex reserves

Select the correct answer code:

- a) 1, 2, 4
- b) 1, 3, 4
- c) 2, 3, 4
- d) 1, 2, 3, 4

Solution: d)

Markets decide the exchange rate based on a variety of factors like:

- Net foreign currency inflows
- Commodity dependence of the country on global supplies
- Forex reserves
- Growth rate of the economy

If these factors are favourable, the currency strengthens.

4) Consider the following statements regarding GDP deflator.

1. GDP deflator is a measure of the level of prices of all new, domestically produced, final goods and services in an economy in a year.
2. Unlike the CPI, the GDP deflator is not based on a fixed basket of goods and services.
3. When GDP deflator is negative, it necessarily means that there is inflation in the economy.

Which of the above statements is/are correct?

- a) 1, 3
- b) 2, 3
- c) 1, 2
- d) 1, 2, 3

Solution: c)

In economics, the GDP deflator is a measure of the level of prices of all new, domestically produced, final goods and services in an economy in a year.

Like the consumer price index (CPI), the GDP deflator is a measure of price inflation/deflation with respect to a specific base year.

The GDP deflator is a more comprehensive inflation measure than the CPI index because it isn't based on a fixed basket of goods.

When GDP deflator is negative, nominal GDP is less than real DP. It means that there is deflation in the economy.

5) Consider the following statements regarding Primary co-operative credit societies (PACS).

1. Primary co-operative credit societies can do banking business without a license from RBI.
2. These entities are not allowed to raise any deposits from their members or general public.

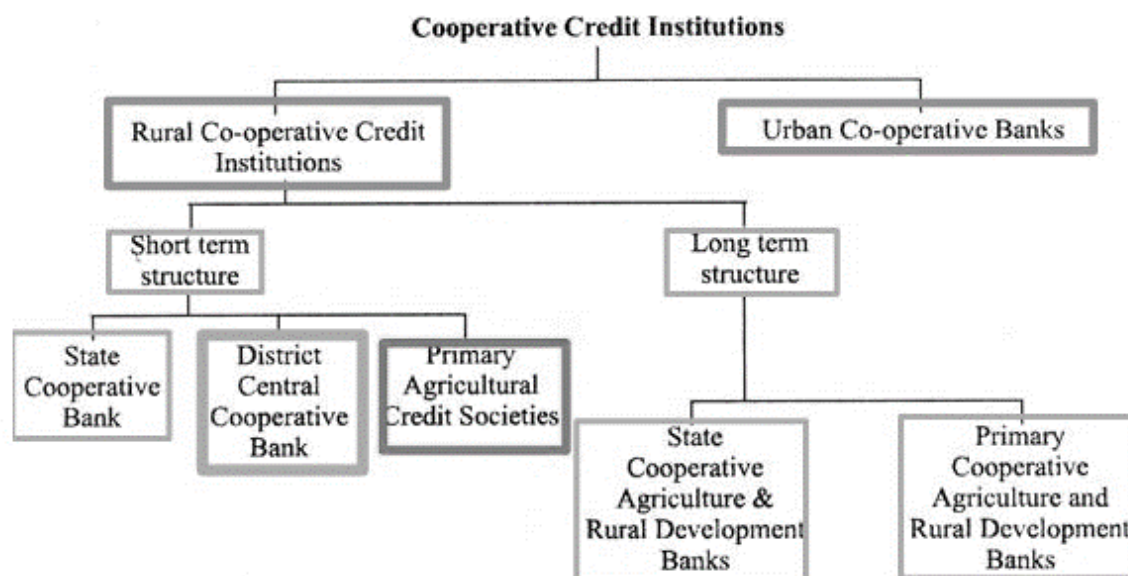
Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only

- c) Both 1 and 2
d) Neither 1 nor 2

Solution: b)

A Primary Agricultural Credit Society (PACS) is a basic unit and smallest co-operative credit institutions in India. It works on the grassroots level (gram panchayat and village level).



Such co-operative societies have neither been issued any licence under Banking Regulation Act, 1949 (As Applicable to Cooperative Societies) nor are they authorized for doing banking business. In fact, recently, Reserve Bank of India has issued an advisory to general public against depositing money in co-operative societies or primary co-operative credit societies (PACS).

These entities are allowed to raise deposits only from their members.

The insurance cover from Deposit Insurance and Credit Guarantee Corporation will not be available for deposits placed with these entities. So, members of public have been advised by RBI to exercise caution and carry out due diligence of such entities before dealing with them.

6) Core Inflation does not indicate a price rise in which of these commodities?

1. Consumer goods
2. Hydrocarbon fuel
3. Food products
4. IT products

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 4
- c) 2, 3
- d) 1, 3, 4

Solution: c)

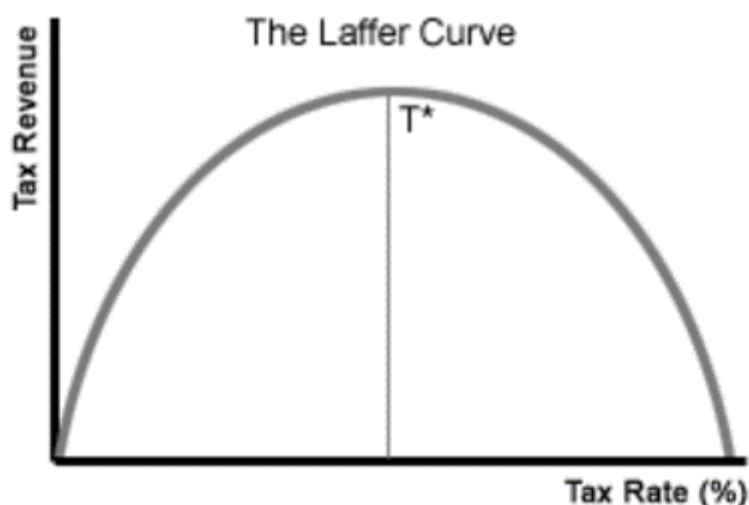
Core Inflation is also known as underlying inflation, is a **measure of inflation which excludes items that face volatile price movement, notably food and energy**. In other words, Core Inflation is nothing but Headline Inflation minus inflation that is contributed by food and energy commodities.

7) Laffer curve is a relationship between

- a) Tax rate and tax elasticity

- b) Tax rate and tax buoyancy
- c) Tax buoyancy and tax elasticity
- d) Tax revenue and tax rate

Solution: d)



In economics, the Laffer curve, developed by supply-side economist Arthur Laffer, illustrates a theoretical **relationship between rates of taxation and the resulting levels of the government's tax revenue**. The Laffer curve assumes that no tax revenue is raised at the extreme tax rates of 0% and 100%, and that there is a tax rate between 0% and 100% that maximizes government tax revenue.

The shape of the curve is a function of taxable income elasticity – i.e., taxable income changes in response to changes in the rate of taxation.

The Laffer curve is typically represented as a graph that starts at 0% tax with zero revenue, rises to a maximum rate of revenue at an intermediate rate of taxation, and then falls again to zero revenue at a 100% tax rate.

8) Consider the following statements about International Finance Corporation (IFC).

1. It is an arm of the International Monetary Fund (IMF) that offers investment, advisory, and asset-management services.
2. It encourages private-sector development in developing countries.
3. IFC also focuses on sustainable agriculture, healthcare and education.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: c)

The International Finance Corporation (IFC) is an international financial institution that offers investment, advisory, and asset-management services to encourage private-sector development in developing countries. **The IFC is a member of the World Bank Group** and is headquartered in Washington, D.C. in the United States.

It was established in 1956, as the private-sector arm of the World Bank Group, to advance economic development by investing in for-profit and commercial projects for poverty reduction and promoting development.

Since 2009, the IFC has focused on a set of development goals that its projects are expected to target. Its goals are to increase sustainable agriculture opportunities, improve healthcare and education, increase access to financing for microfinance and business clients, advance infrastructure, help small businesses grow revenues, and invest in climate health.

9) Consider the following statements about Treasury Bills (T-Bills).

1. These are issued to meet short-term mismatches in receipts and expenditure.
2. These can be issued by the government as well as bluechip companies.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

Treasury bills or T-bills, which are money market instruments, are **short term debt instruments issued by the Government of India** and are presently issued in three tenors, namely, 91 day, 182 day and 364 day. **Treasury bills are zero coupon securities and pay no interest.** Instead, they are issued at a discount and redeemed at the face value at maturity. For example, a 91 day Treasury bill of ₹100/- (face value) may be issued at say ₹ 98.20, that is, at a discount of say, ₹1.80 and would be redeemed at the face value of ₹100/-.

10) Which of the following statements about Monetary Policy Framework Agreement is correct?

- a) It is an agreement between Government and Reserve Bank of India (RBI) on the maximum tolerable inflation rate that RBI should target to achieve price stability.
- b) It is an agreement between Government and Reserve Bank of India (RBI) on the minimum inflation rate that RBI should target to achieve growth.
- c) It is an agreement between Banks and Reserve Bank of India (RBI) to ensure that the changes in the Interest rates are passed on to the customers.
- d) Both b and c

Solution: a)

Monetary Policy Framework Agreement is an agreement reached between Government and the central bank in India – The Reserve Bank of India (RBI) - on the maximum tolerable inflation rate that RBI should target to achieve price stability.

The Reserve Bank of India and Government of India signed the Monetary Policy Framework Agreement on 20 February 2015 which made inflation targeting and achieving price stability the responsibilities of RBI. Subsequently, the government, while unveiling the Union Budget for 2016-17 in the Parliament, proposed to amend the Reserve Bank of India (RBI) Act, 1934 for giving a statutory backing to the aforementioned Monetary Policy Framework Agreement and for setting up a Monetary Policy Committee (MPC).

11) In an economy with an inverted yield curve

1. It is more profitable when invested on bonds with a shorter duration than on bonds that have a longer duration.
2. Government bonds will always yield a higher return than corporate bonds.

Select the correct answer code:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Solution: a)

The yield curve is a graph showing the relationship between interest rates earned on lending money for different durations.

Normally, someone who lent to the government or a corporation for one year (by buying a one-year government or corporate bond) would expect to get a lower interest rate than someone who lent for five or ten years, making the yield curve upward-sloping.

An inverted yield curve is when the yields on bonds with a shorter duration are higher than the yields on bonds that have a longer duration. It's an abnormal situation that often signals an impending recession.

Statement 2: It applies irrespective of the kind of borrower/lender.

- 12) The nationalisation of banks was a watershed moment in the history of Indian banking. It coincided with
- Founding of the Reserve Bank of India (RBI)
 - Announcement of the first Industrial Policy
 - Founding of NABARD
 - None of the above

Solution: d)

The **nationalisation of banks in 1969** was a watershed moment in the history of Indian banking.

RBI was set up in 1935 under the Reserve Bank of India Act, 1934.

The National Bank for Agriculture and Rural Development (**NABARD**) was constituted in **1982** to regulate and supervise the functions of cooperative banks and RRBs.

Industrial Policy Resolution of 1956 (IPR 1956) is a resolution adopted by the Indian Parliament in April 1956. It was the first comprehensive statement on industrial development of India.

- 13) Consider the following statements.

- Non-convertible debentures (NCDs) are debt instruments that companies issue to investors to raise money for their capital requirements.
- The Government has made it mandatory for all listed companies, non-banking financial companies (NBFC) and housing finance companies (HFCs) to create a Debenture Redemption Reserve (DRR) for their outstanding bonds.

Which of the above statements is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Solution: a)

One of the recent measures taken by the government to boost the fear-ridden bond market was the decision to **do away with the requirement for all listed companies, non-banking financial companies (NBFC) and housing finance companies (HFCs) to create a Debenture Redemption Reserve (DRR) for their outstanding bonds.**

Non-convertible debentures (NCDs) are debt instruments that companies issue to investors to raise money for their capital requirements. **NCDs regularly pay interest at a fixed rate for a fixed tenure till maturity.** However, there have been incidents where companies raising funds through NCDs at high rates of interest have failed to pay their dues. In order to protect the interests of retail investors in such cases, the Companies Act mandated that companies must maintain a redemption reserve. As per the Companies (Share Capital and Debentures) Rules 2014, all listed companies, NBFCs, HFCs and unlisted companies were to create a DRR with 25 per cent of the value of outstanding debentures from their profits.

A DRR ensures that a company sets aside a portion of its profits toward repayment of long-term NCDs out of its current profits.

The DRR requirement for unlisted companies (excluding unlisted NBFCs and HFCs) is still on, but at a lower rate of 10 per cent (against the earlier 25 per cent).

[Source](#)

14) Which of the following statements is correct regarding Accommodative monetary policy?

- a) Central banks reduce the money supply to keep inflation under control
- b) Central banks expand the money supply to boost the economy
- c) Central banks increase the interest rates frequently
- d) None of the above

Solution: b)

Accommodative monetary policy, also known as **loose credit or easy monetary policy**, occurs when a central bank attempts to **expand the overall money supply to boost the economy** when growth is slowing (as measured by GDP). These measures are meant to make money less expensive to borrow and encourage more spending.

15) When the Reserve Bank of India cuts the repo rate by 50 basis points, which of the following is likely to happen?

- a) India's GDP growth rate increases drastically
- b) Foreign Institutional Investors will bring more capital into our country
- c) Scheduled Commercial Banks may cut their lending rates
- d) It may drastically reduce the liquidity to the banking system

Solution: c)

A decrease in the repo rate means the commercial banks can borrow more money from RBI at a cheaper rate, meaning lending rates for consumers may decrease.

16) Which of the following are the major economic challenges for a State Economy?

1. Deciding what goods to produce
2. Ensuring a balance between supply and demand of goods
3. To ascertain the level of investment required for an optimal productive capacity in the economy

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

Every economy meets with certain challenge.

- One, to **ascertain the availability of the goods and services required by the population** and second, the presence of the supply network.
- Every economy has to, at first, guarantee the required level of goods and services out of its production process.
- For this, proper level of production capacity should be built which requires a particular level of capital formation or investment. From where the investible funds will be managed is altogether a separate question.
- Whether the investment will come from the government, the domestic private sector or the foreigners?
- Once these details are cleared and selected as per the socio-economic condition of the economy, a proper distribution network for goods and services produced is assured.

17) Consider the following statements regarding the finances of the state governments.

1. The average fiscal deficit of state governments has always shot above that of the Central government during the last decade.
2. Most states meet their revenue deficit targets by increasing revenue since they are not allowed to borrow from the markets.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

Except during 2016-17, state governments have regularly met their fiscal deficit target of 3% of GDP (much lower than the Central government's usual deficit for last one decade). This should allay a lot of apprehensions about state-level finances, especially in the wake of extensive farm loan waivers that many states announced as well as the extra burden that was put on state budgets after the UDAY scheme for the power sector was introduced in 2014-15.

However, most states ended up meeting the fiscal deficit target not by increasing their revenues but by reducing their expenditure and increasingly borrowing from the market.

18) 'Total Factor Productivity (TFP)' of an economy can improve in which of the following ways?

1. Investing in research and development (R&D)
2. Gross Capital Formation (Infrastructure)

Select the correct answer code:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

Total-factor productivity (TFP), also called multi-factor productivity, is usually measured as the ratio of aggregate output (e.g., GDP) to aggregate inputs. Under some simplifications about the production technology, **growth in TFP becomes the portion of growth in output not explained by growth in traditionally measured inputs of labour and capital used in production.**

If a nation has the same stock of land, labour and capital, and yet it achieves high rates of GDP growth consistently. If inputs are same, how does output increase over time?

Either the individual productivities of factors would have increased, or the total combined productivity of the economy has increased.

This can happen either by **better technology, better infrastructure** etc that improve the total factor productivity of the economy. Suppose, now a factory requires 10 hours to produce a good. With better techniques of production, the same can be achieved in 2 hours and the company can produce than ever before.

19) Revenue expenditure of the government consists of

1. Interest payments on debt incurred by the government
2. Grants given to state governments
3. Administrative expenditures

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: d)

Revenue expenditure consists of all those expenditures of the government which do not result in creation of physical or financial assets.

It relates to those expenses incurred for the normal functioning of the government departments and various services, interest payments on debt incurred by the government, and grants given to state governments and other parties (even though some of the grants may be meant for creation of assets).

20) The Financial Stability Report (FSR) is released by

- a) Reserve Bank of India
- b) Department of Economic Affairs
- c) Ministry of Commerce and Industry (India)
- d) Department of Revenue

Solution: a)

RBI releases Financial Stability Report. The FSR reflects the collective assessment of the Sub-Committee of the Financial Stability and Development Council (FSDC) on risks to financial stability, as also the resilience of the financial system. The Report also discusses issues relating to development and regulation of the financial sector.

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4. Art and Culture

1) Consider the following statements.

1. Buddhist Viharas are permanent shelters or monasteries for dwelling and rest.
2. Udayagiri Caves were constructed during the reign of Ashoka.
3. Kailash temple is located in Ellora.

Which of the above statements is/are correct?

- a) 1, 3
- b) 2, 3
- c) 3 only
- d) 1, 2, 3

Solution: a)

Udayagiri Caves were constructed during the times of Gupta.

2) With reference to the history of philosophical thought in India, consider the following statements regarding Vaisheshika School.

1. It believes in the physicality of the Universe and is considered to be the realistic and objective philosophy that governs the universe.
2. It developed the atomic theory, i.e. all material objects are made of atoms.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

The Vaisheshika school believes in the physicality of the Universe and is considered to be the realistic and objective philosophy that governs the universe. The Kanada who also wrote the basic text governing the Vaisheshika philosophy is often considered the founder of this school.

They argue that everything in the universe was created by the five main elements: fire, air, water, earth and ether (sky). These material elements are also called Dravya.

They also argue that reality has many categories, for example, action, attribute, genus, inherence, substance and distinct quality. As this school has a very scientific approach, they also developed the atomic theory, i.e. all material objects are made of atoms.

This school was also responsible for the beginning of physics in Indian subcontinent. They are considered to be the propounders of the mechanical process of formation of this Universe.

3) One of the most important buildings in Fatehpur Sikri, it is also known as the "Dream of Stones":

- a) Panch Mahal
- b) Jantar Mantar
- c) Meenakshi Temple
- d) Hawa Mahal

Solution: a)

All options could be eliminated except A.

Hawa Mahal is a palace in Jaipur. Jantar Mantar (there are many, but the famous one) is in Delhi. Meenakshi Temple is in TN.

The Panch Mahal is known as the wind catcher tower. It was commissioned by sikarwar rajputs. This is an extraordinary structure employing the design elements of a Buddhist Temple; entirely columnar, consisting of four stories of decreasing size arranged asymmetrically upon the ground floor.

4) Consider the following statements.

1. The arts of Lower Palaeolithic people are abundantly found on the banks of river Narmada
2. Prehistoric paintings are also found in Bihar

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

We do not really know if Lower Palaeolithic people ever produced any art objects. But by the Upper Palaeolithic times we see a proliferation of artistic activities.

In India the earliest paintings have been reported from the Upper Palaeolithic times.

Remnants of rock paintings have been found on the walls of the caves situated in several districts of Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Karnataka and Bihar.

Some paintings have been reported from the Kumaon hills in Uttarakhand also

5) Consider the following statements with reference to Central Indian paintings.

1. They take inspiration from Indian epics and religious texts.
2. They developed as an anti-Sanskrit cult to promote culture of tribal regions.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

Unlike Mughal painting which is primarily secular, the art of painting in Central India, Rajasthani and the Pahari region etc. is deeply rooted in the Indian traditions, taking inspiration from Indian epics, religious texts like the Puranas, love poems in Sanskrit and other Indian languages, Indian folk-lore and works on musical themes.

The cults of Vaishnavism, Saivism and Sakti exercised tremendous influence on the pictorial art of these places. Among these the cult of Krishna was the most popular one which inspired the patrons and artists.

It did not develop as anti-Sanskrit movement as mentioned in the statement above.

6) Consider the following statements regarding Sohrai Khovar Painting.

1. It is a traditional and ritualistic mural art.
2. It is created during marriage and harvest seasons.
3. The painting is created by the local tribal women in Jharkhand.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

Jharkhand's Sohrai Khovar painting was given the Geographical Indication (GI) tag recently.

The Sohrai Khovar painting is a traditional and ritualistic mural art being practised by local tribal women during local harvest and marriage seasons using local, naturally available soils of different colours in the area of Hazaribagh district of Jharkhand.

The Sohrai Khovar painting is primarily being practised only in the district of Hazaribagh. However, in recent years, for promotional purposes, it has been seen in other parts of Jharkhand.

Traditionally painted on the walls of mud houses, they are now seen on other surfaces, too. The style features a profusion of lines, dots, animal figures and plants, often representing religious iconography. In recent years, the walls of important public places in Jharkhand, such as the Birsā Munda Airport in Ranchi, and the Hazaribagh and Tatanagar Railway Stations, among others, have been decorated with Sohrai-Khovar paintings.



7) Consider the following statements about Abhidhamma Pitaka.

1. It is a scripture of Mahayana Buddhism.
2. It contains Buddhist philosophy.
3. It was first compiled in Sanskrit and then translated to Prakrit.

Which of the above statements is/are correct?

- a) 1 only
- b) 2, 3
- c) 2 only
- d) 1, 2

Solution: c)

Gautama Buddha's three main disciples known as Upali, Ananda and Mahakashyap remembered his teachings and passed them on to his followers.

It is believed that soon after the Buddha's death a council was called at Rajagriha where Upali recited the Vinaya Pitaka (rules of the order) and Ananda recited the Sutta Pitaka (Buddha's sermons or doctrines and ethics).

Sometime later the Abhidhamma Pitaka consisting of the Buddhist philosophy came into existence.

It is the last of the three pitakas constituting the Pali Canon, the scriptures of Theravāda Buddhism.

It is a detailed scholastic reworking of material appearing in the Suttas, according to schematic classifications. It does not contain systematic philosophical treatises, but summaries or enumerated lists.

8) The Vedic literature is broadly divided into two categories viz. Shruti and Smriti. What is the difference between them?

1. Shruti is considered eternal whereas Smriti is subject to change.
2. Smriti philosophy stands in direct opposition or contrast to Shruti philosophy.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: a)

Shruti describes the sacred texts comprising the central canon of Hinduism viz. Vedas, Brahmanas, Aranyakas, & Upanishads.

Smriti literally means "that which is remembered," and it is entire body of the post Vedic Classical Sanskrit literature. It comprises Vedanga, Shad darsana, Puranas, Itihasa, Upveda, Tantras, Agamas, Upangs. There is another post Vedic class of Sanskrit literature called Epics which includes Ramayana and Mahabharata.

However, there is not a distinct divide between Shruti and Smriti. Both Shruti and Smriti can be represented as a continuum, with some texts more canonical than others.

9) Consider the following statements.

1. Buddhist themes have been wall painted in Ajanta.
2. The rock shelters and caves of Bhimbetka host paintings of geometric patterns.
3. Bagh caves are renowned for mural paintings.

Which of the above statements is/are correct?

- a) 1 only
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

The Ajanta Caves constitute ancient monasteries and worship-halls of different Buddhist traditions carved into a 75-metre (246 ft) wall of rock. The caves also present paintings depicting the past lives and rebirths of the Buddha, pictorial tales from Aryasura's Jatakamala, and rock-cut sculptures of Buddhist deities.

The rock shelters and caves of Bhimbetka have a large number of paintings. The oldest paintings are found to be 10,000 years old, but some of the geometric figures date to as recently as the medieval period.

The Bagh Caves are a group of nine rock-cut monuments, situated among the southern slopes of the Vindhyas in Bagh town of Dhar district in Madhya Pradesh state in central India. These are renowned for mural paintings by master painters of ancient India.

10) Phamsana, Shekhari and Valabhi are

- a) pre-historic caves made during the Pleistocene age.
- b) prominent schools of Buddhist Tibetan Tanka paintings
- c) They are styles of temple architecture of Northern India
- d) Styles of temple architecture practiced during Gupta period.

Solution: c)

The main styles of North Indian temples include Latina, Phamsana, Shekhari and Valabhi types.

Valabhi style of temples comprises ayatakara talachhanda yojana (rectangular ground plan), a doorway to one of its longer parasvas (side) and a semi- cylindrical sikhara (superstructure).

About fifty percent of Valabhi style temples are in Uttarakhand.

Latina types are mainly used for housing the garbhagriha.

Phamsana type shikhara are broader and shorter than Latina type.

In many north Indian temples, the phamsana type is used for mandapas while the main garbhagriha is housed in a Latina building.

11) Consider the following statements.

1. The cave is carved into the hard-monolithic granite rock face of Barabar hills, flanked to its left by the smaller Sudama cave.
2. The ornamentation on the "curved architrave" of the cave consists of carvings of elephants on their way to the stupas.

The above statements refer to?

- a) Kanheri Caves
- b) Lomas Rishi caves
- c) Udayagiri Caves
- d) None of the above

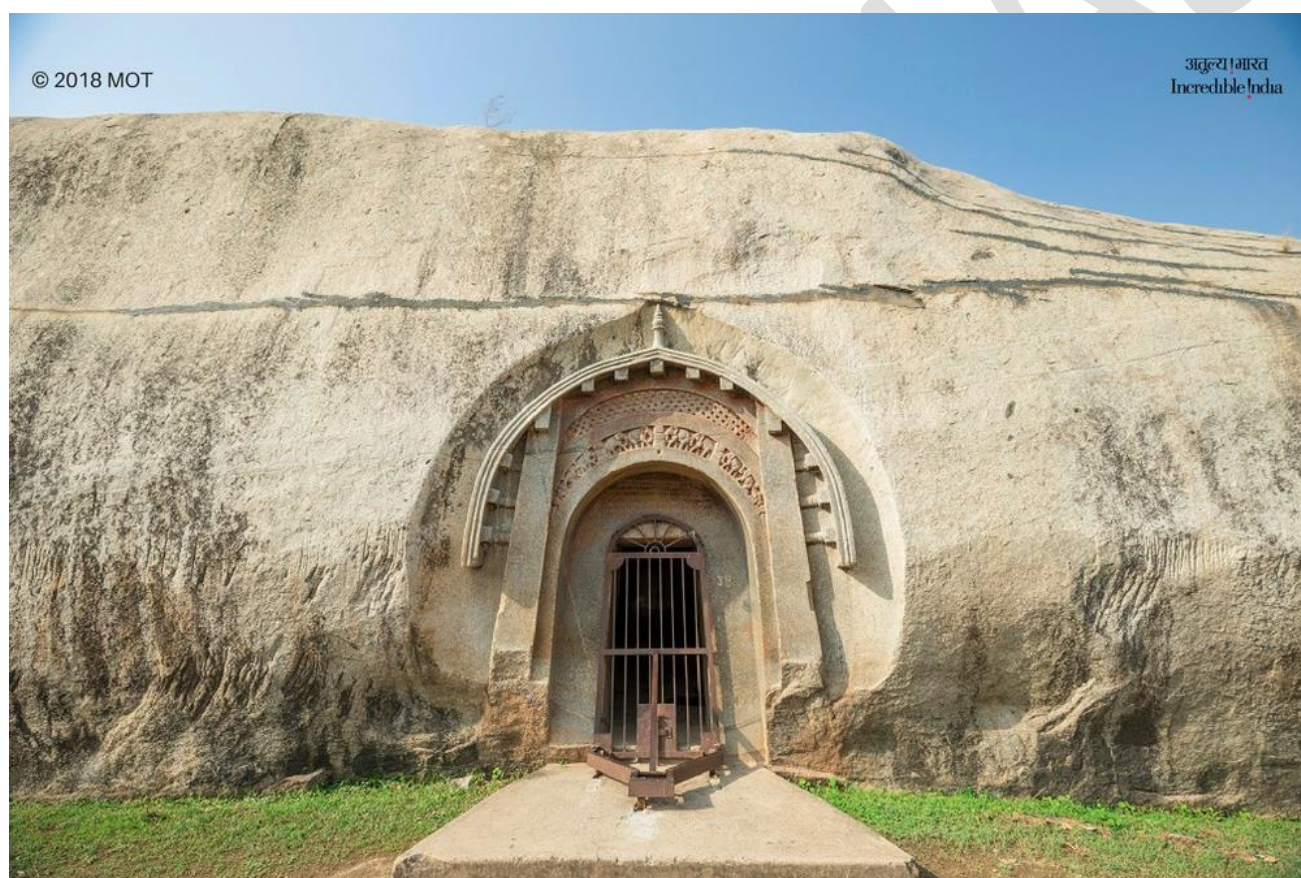
Solution: b)

Lomas Rishi Cave is carved into the hard-monolithic granite rock face of Barabar hills, flanked to its left by the smaller Sudama cave.

This rock-cut cave was carved out as a sanctuary. It was built during the Ashokan period of the Maurya Empire in the 3rd century BC, as part of the sacred architecture of the Ajivikas.

The hut-style facade at the entrance to the cave, which was meant as a milk shed, had an impact on South Asian rock-cut architecture.

It became a model for all such arched entrance portals built at many other Buddhist and Jain caves in India, such as the much bigger Buddhist Chaitya halls of Ajanta or Karli in Maharashtra.



12) Consider the following statements regarding Central Indian paintings.

- 1. They take inspiration from Indian epics and religious texts.
- 2. They developed as an anti-Sanskrit cult to promote culture of tribal regions.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

Unlike Mughal painting which is primarily secular, **the art of painting in Central India, Rajasthani and the Pahari region etc. is deeply rooted in the Indian traditions, taking inspiration from Indian epics, religious texts like the**

Puranas, love poems in Sanskrit and other Indian languages, Indian folk-lore and works on musical themes. The cults of Vaishnavism, Saivism and Sakti exercised tremendous influence on the pictorial art of these places.

13) Which of the following were the great centres of Buddhist learning and art.

1. Nalanda
2. Odantapuri
3. Vikramsila
4. Somarupa

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 3, 4
- c) 1, 2, 4
- d) 1, 2, 3, 4

Solution: d)

The Pala period (750 A.D. to the middle of the 12th century) witnessed the last great phase of Buddhism and of the Buddhist art in India. The Buddhist monasteries (*mahaviharas*) of Nalanda, Odantapuri, Vikramsila and Somarupa were great centres of Buddhist learning and art.

14) Consider the following statements regarding the Pala School of Art.

1. It developed in the Magadha region of Southern Bihar in form of miniature paintings.
2. It is a naturalistic style which resembles the ideal forms of contemporary bronze and stone sculpture.
3. It started flourishing after the destruction of the Buddhist monasteries at the hands of Muslim invaders.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: a)

The earliest examples of miniature painting in India exist in the form of illustrations to the religious texts on Buddhism executed under the Palas of the eastern India and the Jain texts executed in western India during the 11th-12th centuries A.D.

The Pala dynasty came to power around 750 A.D. The Pala school of art first flourished in the Magadha region of Southern Bihar, the homeland of Buddhist religion. Not surprisingly, the majority of early Pala-period remains are Buddhist.

The Pala painting is characterised by sinuous line and subdued tones of colour. It is a naturalistic style which resembles the ideal forms of contemporary bronze and stone sculpture, and reflects some feeling of the classical art of Ajanta.

The Pala art came to a sudden end after the destruction of the Buddhist monasteries at the hands of Muslim invaders in the first half of the 13th century. Some of the monks and artists escaped and fled to Nepal, which helped in reinforcing the existing art traditions there.

15) The Jain philosophy holds that the world is created and maintained by?

- a) Universal law.
- b) Universal truth.
- c) Universal faith.
- d) Universal soul.

Solution: a)

According to Jain doctrine, the universe and its constituents—soul, matter, space, time, and principles of motion—have always existed. All the constituents and actions are governed by universal natural laws.

16) Which of these can be found at Ajanta Caves?

1. Boddhisatva Images
2. Mahaparinirvana image of Buddha
3. Tales from Avadanas

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: d)

The themes of the paintings are the events from the life of the Buddha, the Jatakas and the Avadanas. Some paintings such as Simhala Avadana, Mahajanaka Jataka and Vidharpundita Jataka cover the entire wall of the cave.

The other important paintings are the famous Padmapani and Vajrapan. Figures in these caves are painted with considerable naturalism and there is no over-stylisation.

17) Consider the following statements regarding the inscriptions found at Aihole, Karnataka.

1. They are written in different language and script.
2. They mention about poet Kalidasa.
3. It contains only about praising of Kings.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: a)

The inscription written in Sanskrit and it is in Kannada script.

Many inscriptions are found at Aihole, but the inscription which is found at Meguti Temple popularly known as Aihole inscription, which has the significance in the history of India, witnessed for the many historical events of Chalukyas.

There is a mention about the defeat of Harshavardhana by Pulikeshi II. And there is a mention about the victory of Chalukyas on Pallavas, also mentioned about the shifting of the capital from Aihole to Badami by Pulikeshi. There is mention about the poet Kalidasa.

18) Consider the following statements regarding the major features of Chola age paintings?

1. They were often done on temple panels.
2. They show narrations and aspects related to Lord Shiva.
3. They avoid depictions of humans and plants.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: a)

- The most important Chola paintings are those in Brihadeswara temple. The paintings were executed on the walls of the narrow passage surrounding the shrine.
- The great tradition of painting show narrations and aspects related to Lord Shiva, Shiva in Kailash, Shiva as Tripurantaka, Shiva as Nataraja, a portrait of the patron Rajaraja and his mentor Kuruvar, dancing figures, etc.
- The paintings of Brihadeswara temple exemplify the stylistic maturity the artists evolved over the years.
- Sinuous pre-determined flow of lines, supple modelling of figures, elongation of the physiognomic features of human figures—all these represent the perfection the Chola artist had achieved during the period on the one hand and the phase of transition on the other.

19) Consider the following statements regarding Guru Nanak

1. Guru Nanak did not believe in Hinduism and Islam and so he wished to establish a new religion, which he named as Sikhism
2. He rejected sacrifices, ritual baths, image worship, austerities and the scriptures.
3. He defined five symbols: uncut hair, a dagger, a pair of shorts, a comb and a

steel bangle which need to be worn by his followers.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) 1, 3
- d) 2, 3

Solution: b)

- **Guru Nanak did not wish to establish a new religion**, but after his death his followers consolidated their own practices and distinguished themselves from both Hindus and Muslims.
- Also he did not give the name Sikhism. He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims.
- It was Guru Gobind Singh who defined its five symbols: uncut hair, a dagger, a pair of shorts, a comb and a steel bangle.

20) Rekhapida, pidhadeul and khakra are classifications of the temple architecture of

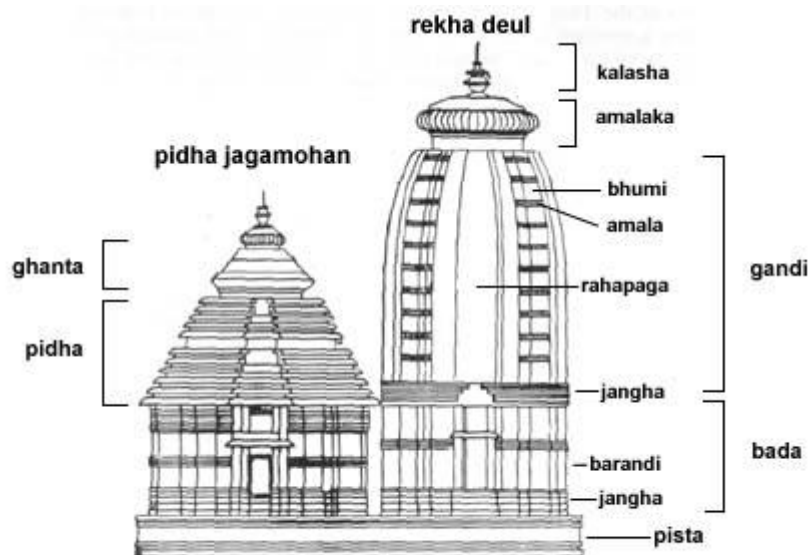
- a) Tamil Nadu
- b) Odisha
- c) Assam
- d) Rajasthan

Solution: b)

The main architectural features of Odisha temples are classified in three orders, i.e., rekhapida, pidhadeul and khakra.

The temples of Odisha constitute a distinct substyle within the nagara order. In general, here the shikhara, called deul in Odisha, is vertical almost until the top when it suddenly curves sharply inwards.

Deuls (part of the word pidhadeul) are preceded, as usual, by mandapas called jagamohana in Odisha.



Source: The Hindu Temple, p. 12 (modified)

21) Which of the following sites of the Indus Valley Civilization are present in India.

1. Dholavira
2. Banawali
3. Alamgirpur
4. Mehrgarh

Select the correct answer code:

- a) 1, 2, 4
- b) 1, 2, 3
- c) 1, 2
- d) 1, 2, 3, 4

Solution: b)

Mehrgarh is in Pakistan.

Dholavira – Gujarat

Banawali - Haryana

Alamgirpur – Uttar Pradesh

22) Rajaraja Chola I is associated with which of the following cultural heritages of India?

1. Brihadeeswara temple at Tanjore
2. The compilation of Thirumurai
3. Nagapattinam monastery

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: d)

Rajaraja Chola I completed the construction of the famous Rajarajeswara temple or Brihadeeswara temple at Tanjore in 1010 A.D.

He also helped in the construction of a Buddhist monastery at Nagapattinam.

During his reign, the texts of the Tamil poets Appar, Sambandar and Sundarar were collected and edited into one compilation called Thirumurai.

23) Consider the following statements with reference to the views of Namdev, a bhakti saint.

1. As per Namdev, the eternal reality Brahmana is neither nirguna nor saguna.
2. Namdev opposed the principles of Vaishnavism and built his popular movement against Vaishnavist elitism.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

His philosophy contains both nirguna and saguna Brahman elements, with monistic themes.

Nirguna Brahman means the eternal reality with no qualities of its own, similar to nothingness.

Saguna means those with divine qualities such as love, light, compassion etc.

Namdev was influenced by Vaishnavism, and became widely known in India for his devotional songs set to music.

The literary works of Namdev were influenced by Vaishnava philosophy

24) The triple headed rockcut Shiva, Maheshamurti, can be found on the island of

- a) Malwa
- b) Ellora
- c) Elephanta
- d) Ajanta

Solution: c)

Described as a "masterpiece of Gupta-Chalukyan art", the most important sculpture in the caves is the Trimurti, carved in relief at the back of the cave facing the entrance, on the north-south axis.

It is also known as Trimurti Sadashiva and Maheshmurti.

The image, around 20 ft in height, depicts a three-headed Shiva, representing Panchamukha Shiva.

The three heads are said to represent three essential aspects of Shiva: creation, protection, and destruction.



25) Gajendra Moksha is a Puranic legend from the Bhagavata Purana. The legend often painted on temple panels. It has been symbolically depicted by

- a) Vishnu's suppression of an asura who had taken the form of an elephant

- b) The travel itinerary of an elephant to the higher realms
- c) Shiva meditating underneath an elephant trunk and blessing him with virtues
- d) A jataka in which a fox rests inside a torn elephant trunk

Solution: a)

There are three major themes vashnavite usually painted on temple panels.

Sheshashayana is the form of Vishnu where he is shown reclining on the sheshanaga called Ananta.

Nara-Narayan shows the discussion between the human soul and the eternal divine.

Gajendramoksha is the story of achieving moksha, symbolically communicated by Vishnu's suppression of an asura who had taken the form of an elephant.

It is one of the famous exploits of the god Vishnu. In this episode, Vishnu came down to earth to protect Gajendra, the elephant, from the clutches of Makara, the Crocodile, and with Vishnu's help, Gajendra achieved moksha, or salvation.

Gajendra then attained a form like that of the god (Sarupya Mukti) and went to Vaikuntha with Vishnu.



5. History

1) Match List-I with List-II and select the correct answer from the code given below

List-I (Authors)
A. Ashvaghosha
B. Vatsyayana
C. Hala
D. Nagasena

List-II (Books)
1. Kamasutra
2. Gathasaptashati
3. Milinda Panho
4. Buddha Charita

Codes:

- A B C D
a) 4 1 2 3
b) 4 1 3 2
c) 1 4 2 3
d) 1 4 3 2

Solution: a)

2) Consider the following statements regarding Regulating Act of 1773.

1. It was the first step taken by the British Government to control and regulate the affairs of the East India Company in India.
2. It provided for the establishment of a Supreme Court at Calcutta.
3. It promoted the servants of the Company to engage in any private trade.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: a)

This act is of great constitutional importance as

- (a) it was the first step taken by the British Government to **control and regulate the affairs of the East India Company in India**;
- (b) it recognised, for the first time, the political and administrative functions of the Company; and
- (c) it laid the foundations of central administration in India.
- (d) It provided for the **establishment of a Supreme Court at Calcutta** (1774) comprising one chief justice and three other judges.
- (e) It **prohibited the servants of the Company from engaging in any private trade** or accepting presents or bribes from the natives.

3) With reference to the Carnatic Wars, consider the following statements:

1. The First Carnatic War (1744-48) was triggered by the War of the Austrian Succession.
2. The battle of Wandiwash ended the French threat to British in India.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

The First Carnatic War (1744-48) was triggered by the War of the Austrian Succession.

The battle of Wandiwash ended the colonial interests of French in India and their presence was limited to Puducherry.

4) Which of the following were annexed by the British citing the Doctrine of Lapse?

1. Jhansi
2. Satara
3. Sambalpur

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

The final wave of annexations occurred under Lord Dalhousie who was the Governor-General from 1848 to 1856. He devised a policy that came to be known as the Doctrine of Lapse.

The doctrine declared that if an Indian ruler died without a male heir his kingdom would "lapse", that is, become part of Company territory. One kingdom after another was annexed simply by applying this doctrine: Satara (1848), Sambalpur (1850), Udaipur (1852), Nagpur (1853) and Jhansi (1854).

Finally, in 1856, the Company also took over Awadh.

5) Consider the following statements regarding Subhash Chandra Bose.

1. He became the president of INC for two consecutive years.
2. The idea of the Indian National Army (INA) was first conceived by Subhash Chandra Bose.
3. He opposed the Dominion status as proposed in the Nehru Report.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 3 only

Solution: b)

The idea of creating an army out of the Indian prisoners of war (POWs) was originally that of Mohan Singh, an Indian army officer who had decided not to join the retreating British army in Malaya.

The Japanese handed over the Indian prisoners of war to Mohan Singh who tried to recruit them into an Indian National Army.

In 1938, Subhash Chandra Bose became the president of INC at Haripur session.

In 1939, Subhash Chandra Bose again became the president of INC by defeating Gandhi's candidate Patabhi Sitaramayya.

In 1928, Subhash Chandra Bose opposed the Dominion status as proposed in the Nehru Report.

6) Consider the following statements regarding Raja Rammohan Roy and Brahmo Samaj.

1. Raja Rammohan Roy, the founder of Brahmo Samaj was called the father of Indian Renaissance.
2. Rammohan Roy translated into Bengali the Vedas and the five Upanishads.
3. Brahmo Samaj aimed to purify Hinduism, preach monotheism and establish a new religion.

Which of the above statements is/are correct?

- a) 1, 3
- b) 1, 2
- c) 2, 3

d) 1, 2, 3

Solution: b)

Raja Rammohan Roy (1772-1833), often called the father of Indian Renaissance and the maker of Modern India. Rammohan Roy believed in the modern scientific approach and principles of human dignity and social equality. He put his faith in monotheism. He wrote Gift to Monotheists (1809) and **translated into Bengali the Vedas and the five Upanishads** to prove his conviction that ancient Hindu texts support monotheism.

Raja Rammohan Roy founded the Brahmo Sabha in August 1828; it was later renamed Brahmo Samaj. **Rammohan Roy did not want to establish a new religion. He only wanted to purify Hinduism of the evil practices which had crept into it.**

7) According to the terms of the 'Subsidiary Alliance', Indian rulers were

1. Not allowed to have their independent armed forces
2. Supposed to protect the British representatives in the princely states

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

According to the terms of this alliance, **Indian rulers were not allowed to have their independent armed forces.**

They were to be protected by the Company but had to pay for the "subsidiary forces" that the Company was supposed to maintain for the purpose of this protection. If the Indian rulers failed to make the payment, then part of their territory was taken away as penalty.

For example, when Richard Wellesley was Governor-General (1798-1805), the Nawab of Awadh was forced to give over half of his territory to the Company in 1801, as he failed to pay for the "subsidiary forces". Hyderabad was also forced to cede territories on similar grounds.

8) Which of the following were the causative factors behind the "Indigo or Blue rebellion" in 1859?

1. The peasants were compelled to plant Indigo rather than the food Crops.
2. The peasants were provided loans called "dadon" for indigo planting which was at a very high interest rate.
3. Acquisition of farmland by the British for their industrial projects

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: a)

Indigo planting started in Bengal as early as 1777.

When the British Power expanded, the Indigo planting was emphasized because of a high demand of the Blue Dye in Europe. Apart from the reasons mentioned above, others are:

- Indigo farmers received very low returns for their crops.
- The land under Indigo degraded the land for cultivation of any further crop.
- The contract conditions under which Indigo planters kept the cultivators were harsh.
- The loan made the people indebted and resulted in a rebellion.

9) Consider the following statements regarding Bakasht lands in British India.

1. Bakasht lands were those which the tenants lost to zamindars, mostly during the Depression years, by virtue of non- payment of rent.

2. A legislative exercise was undertaken by the Congress Ministries for the reduction of rent and the restoration of Bakasht lands.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

The Bakasht lands issue became a major ground of contention between the Bihar Provincial Kisan Sabha and the Congress Ministry.

The Congress Ministry had initiated legislation for the reduction of rent and the restoration of Bakasht lands.

Bakasht lands were those which the occupancy tenants had lost to zamindars, mostly during the Depression years (1930s), by virtue of nonpayment of rent, and which they often continued to cultivate as share-croppers.

But the formula that was finally incorporated in the legislation on the basis of an agreement with the zamindars did not satisfy the radical leaders of the kisan Sabha.

The legislation gave a certain proportion of the lands back to the tenants on condition that they pay half the auction price of the land. Besides, certain categories of land had been exempted from the operation of the law.

10) The Mountbatten Plan culminated in

- a) Royal Indian Naval mutiny
- b) The August offer extended by Clement Attlee
- c) Wavell Plan of partition of India
- d) Indian Independence Act, 1947

Solution: d)

Clement Attlee, The Prime Minister of the United Kingdom announced in February 1947 that:

The British Government would grant full self-government to British India by June 1948 at the latest,

The future of the Princely States would be decided after the date of final transfer is decided.

The Act was formulated together by UK Prime Minister Clement Attlee and the Governor-General of India Lord Mountbatten after the representatives of the Indian National Congress, the Muslim League, and the Sikh community gave their consent to the Act. This act came to be known as the 3 June Plan or Mountbatten Plan.

11) Which of the following practices were associated with the Harappan Settlements?

- 1. Ploughing of crop fields
- 2. Mixed cropping
- 3. Consumption of animal products
- 4. Practice of Irrigation

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 3, 4
- c) 1, 2, 4
- d) 1, 2, 3, 4

Solution: d)

The **Harappans ate a wide range of animal products**. Archaeologists have been able to reconstruct use of animals from finds of charred animal bones found at Harappan sites. These include those of cattle, sheep, goat, buffalo and pig.

Archaeologists have found evidence of a **ploughed field at Kalibangan** (Rajasthan). The field had two sets of furrows at right angles to each other, suggesting that **two different crops were grown together**.

Representations on seals and terracotta sculpture indicate that the bull was known, and oxen were used for ploughing.

Terracotta models of the plough have been found at sites in Cholistan and at Banawali (Haryana).

Most Harappan sites are located in semi-aridlands, where irrigation was probably required for agriculture. Traces of canals, water reservoirs and wells have been found at the Harappan sites indicate that **agriculture was practiced**.

12) Which of the following were the features of Mauryan Empire?

1. Presence of a village administration
2. Appointment of provincial governors purely based on meritocracy
3. System of Municipal administration
4. Committees that looked after the administration of Pataliputra

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 3, 4
- c) 2, 3, 4
- d) 1, 2, 3, 4

Solution: b)

Village administration was in the hands of Gramani and his official superior was called Gopa who was in charge of ten or fifteen villages.

The **provincial governors were mostly appointed from the members of royal family**. They were responsible the maintenance of law and order and collection of taxes for the empire.

Both Kautilya and Megasthenes provided the system of **Municipal administration**. Arthashastra contains a full chapter on the role of Nagarika or city superintendent. His chief duty was to maintain law and order.

Megasthenes refers to the six committees of five members each to look after the **administration of Pataliputra**. These committees looked after: 1. Industries 2. Foreigners 3. Registration of birth and deaths 4. Trade 5. Manufacture and sale of goods 6. Collection of sales tax.

13) Consider the following statements regarding tribal movements.

1. The Bodo Movement was a movement for an independent state of Bodoland.
2. The Santhal rebellion was organized both against the British colonial authority and zamindari system.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: d)

The **Santhal rebellion** (June 30, 1855 to January 3, 1856): Also known as the Santhal Hool, it was a native rebellion in eastern India **against both the British colonial authority and zamindari system** by the Santhal people.

The Bodo Movement: The official movement of the Bodos for an independent state of Bodoland started under the leadership of Upendranath Brahma of All Bodo Students' Union (ABSU) on March 2, 1987. While the movement was suppressed by the then government, the ABSU created a political organization called the Bodo People's Action Committee (BPAC). After the Bodo Accord, the Bodoland Autonomous Council (BAC) was constituted, which was later replaced by the BTQ which was established in accordance with the Memorandum of Settlement (MoS) on February 10 2003.

14) The sixth century BCE is regarded as a major turning point in early Indian history. It is associated with which of the following?

1. Use of silver for the first time
2. Development of coinage
3. Some mahajanapadas were ruled by ganas or sanghas

Select the correct answer code:

- a) 2 only
- b) 1, 3
- c) 2, 3
- d) 1, 2

Solution: c)

Silver was being used since Harappan times. Sixth century BCE was an era associated with early states, cities, the growing use of iron, the development of coinage, etc.

It also witnessed the growth of diverse systems of thought, including Buddhism and Jainism. Early Buddhist and Jaina texts mention, amongst other things, sixteen states known as mahajanapadas.

While most mahajanapadas were ruled by kings, some, known as ganas or sanghas, were oligarchies, where power was shared by a number of men, often collectively called rajas. Both Mahavira and the Buddha belonged to such ganas.

In some instances, as in the case of the Vajji sangha, the rajas probably controlled resources such as land collectively.

15) Consider the following statements regarding Pitt's India Act of 1784.

1. Pitt's India Act was also known as the Act of Settlement.
2. It established a system of double government.
3. British Government was given the supreme control over Company's affairs and its administration in India.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: c)

In a bid to rectify the defects of the Regulating Act of 1773, the British Parliament passed the **Amending Act of 1781, also known as the Act of Settlement.** The next important act was the Pitt's India Act of 1784.

Features of the Act

1. It distinguished between the commercial and political functions of the Company.
2. It allowed the Court of Directors to manage the commercial affairs but created a new body called Board of Control to manage the political affairs. Thus, **it established a system of double government.**
3. It empowered the Board of Control to supervise and direct all operations of the civil and military government or revenues of the British possessions in India.

Thus, the act was significant for two reasons: first, the Company's territories in India were for the first time called the **'British possessions in India'**; and second, the British Government was given the supreme control over Company's affairs and its administration in India.

16) Consider the following statements with reference to the First Buddhist Council.

1. It led to splintering of Buddhism in different school of thoughts.
2. The idea was to preserve Buddha's teachings (Sutta) and rules for disciples (Vinaya).

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only

- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

First Buddhist Council was held soon after the mahaparinirvana of the Buddha, around 400 BC under the patronage of king Ajatshatru with the monk Mahakasyapa presiding, at Rajgriha, in the Sattapani Cave. The idea was to preserve Buddha's teachings (Sutta) and rules for disciples (Vinaya).

Ananda, one of the great disciples of Buddha recited Suttas and Upali, another disciple recited Vinaya. The Fourth (not first) Buddhist Council was held at Kundalvana, Kashmir where the council distinctly divided the Buddhism into 2 sects Mahayana and Hinayana.

17) Consider the following as per the account of Megasthenes about the Mauryan administration and security.

1. Megasthenes gives a detailed description of the personal life of Chandragupta Maurya.
2. The state did not favour regulation and control of trade.
3. The Mauryan state took the responsibility for providing irrigational facilities, famine relief and sanitation to the masses.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: b)

Megasthenes gives a detailed **description of the personal life of Chandragupta Maurya**. He led a very splendid life and his palace was unique in its beauty. He also writes that the king was an autocrat and he was the master of un-limited powers. He kept himself fully aware of the main events of his empire through his spies.

During Chandragupta reign, the state regulated trade, levied taxes, and standardized weights and measures. Trade and commerce also flourished during this time. The state was responsible for providing irrigational facilities, succor, sanitation, and famine relief to its masses. Megasthenes, in his writings, has praised the efficient Mauryan administration.

18) The royal title of "Devaputra" and "Hindu Suratrana" are often associated with which of these ruler/kingdoms respectively?

- a) Kushanas and Vijayanagara
- b) Shakas and Cholas
- c) Vakatakas and Cheras
- d) Magadha and Samudragupta

Solution: a)

One means of claiming high status was to identify with a variety of deities. This strategy is best exemplified by the Kushanas (c. first century BCE-first century CE), who ruled over a vast kingdom extending from Central Asia to northwest India.

Colossal statues of Kushana rulers have been found installed in a shrine at Mat near Mathura (Uttar Pradesh). Similar statues have been found in a shrine in Afghanistan as well. Some historians feel this indicates that the Kushanas considered themselves godlike. Many Kushana rulers also adopted the title devaputra, or "son of god", possibly inspired by Chinese rulers who called themselves sons of heaven. The Vijayanagara kings claimed to rule on behalf of the god Virupaksha. Rulers also indicated their close links with the gods by using the title "Hindu Suratrana" this meant Hindu Sultan.

19) Powerful newspapers emerged during the years before the Swadeshi movement. Match the following newspapers and their editors.

1. Swadesamitran: G. Subramaniya Iyer
2. Amrita Bazar Patrika: Motilal Ghosh
3. Voice of India: N. N. Sen

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: a)

Swadesamitran under the editorship of **G. Subramaniya Iyer**; **Kesari** and **Mahratta** under **B.G. Tilak**; **Bengalee** under **Surendranath Banerjea**; **Amrita Bazar Patrika** under **Sisir Kumar Ghosh and Motilal Ghosh**; **Sudharak** under **G.K. Gokhale**; **Indian Mirror** under **N.N. Sen**; **Voice of India** under **Dadabhai Naoroji**.

In fact, there hardly existed a major political leader in India who did not possess a newspaper or was not writing for one in some capacity or the other.

20) Consider the following statements.

1. In Lucknow session, Congress accepted Muslim league's demand of separate electorate for muslims.
2. In Karachi session, Congress adopted a resolution on economic Policy.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

The Lucknow Pact between the Congress and the Muslim League could be considered an important event in the course of the nationalistic struggle for freedom. The Congress accepted the Muslim League's position on separate electorates.

At the Karachi Congress Session—1931, two resolutions were adopted—one on Fundamental Rights and the other on National Economic Programme— which made the session particularly memorable.

6. Environment

1) Consider the following statements about Methanol

1. Methanol is a clean-burning fuel that produces zero smog-causing emissions and can improve air quality and related human health issues.
2. It can be produced from renewable sources also.
3. As a high-octane vehicle fuel, methanol offers excellent acceleration and power.

Which of the above statements is/are incorrect?

- a) 1 only
- b) 1, 2
- c) 1, 3
- d) 2, 3

Solution: a)

Methanol can be used as an energy producing fuel, transportation fuel and cooking fuel, cutting down India's oil import bill by an estimated 20% over the next few years. Unlike CNG, using methanol as a transportation fuel would require minimal alteration in the vehicles.

Methanol is a clean-burning fuel that produces fewer smog-causing emissions — such as sulphur oxides (SOx), nitrogen oxides (NOx) and particulate matter — and can improve air quality and related human health issues. Methanol is most commonly produced on a commercial scale from natural gas. **It can also be produced from renewable sources such as biomass and recycled carbon dioxide.**

As a high-octane vehicle fuel, methanol offers excellent acceleration and power. It also improves vehicle efficiency.

[Source](#)

2) Consider the following statements about Agenda 21

1. Agenda 21 is a non-binding action plan of the United Nations with regard to sustainable development.
2. It is a product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, in 1992.
3. The "21" in Agenda 21 refers to 21 points agreed upon by the member countries to achieve sustainable development.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Solution: a)

Agenda 21 is a non-binding action plan of the United Nations with regard to sustainable development. It is a product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, in 1992. **The "21" in Agenda 21 refers to the 21st century.** Its aim is achieving global sustainable development. One major objective of the agenda 21 is that every local government should draw its own local Agenda 21. Since 2015, Sustainable Development Goals are included in the Agenda 2030.

3) Consider the following matches of mangrove sites with States they are located in.

1. Subernarekha and Dhamra: Odisha
2. Pulicat and Pichavaram: Tamil Nadu
3. Karwar and Coondapur: Maharashtra
4. Vaitarna and Veldur: Telangana

Select the correct answer code:

- a) 1, 2

- b) 3, 4
- c) 2, 4
- d) 1 only

Solution: d)

Mangrove Sites are as follows:

- West Bengal: Sunderbans
- Odisha: Bhaitarkanika, Mahanadi, Subernarekha, Devi, Dhamra, Chilika
- Andhra Pradesh: Coringa, East Godavari, Krishna
- Tamil Nadu: Pichavaram, Muthupet, Ramnad, Pulicat, Kazhuveli
- Karnataka: Coondapur, Dakshin Kannada/Honnar, Karwar, Mangalore Forest Division
- Maharashtra: Achra-Ratnagiri, Devgarj-Vijay Durg, Veldur, Kundalika Revdanda, Mumbai-Diva, Vikhroli, Shreevardhan, Vaitarna, Vasai-Manori, Malvan

4) Consider the following statements.

1. Cold water corals, in general, have greater amount of zooxanthellae than warm water corals and does not build reef-like structures.
2. Cold-water corals differ from warm water corals because the former does not contain symbiotic algae for photosynthesis and grow more slowly.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: b)

Corals that inhabit the colder deep waters of continental shelves and offshore canyons, ranging from 50 to over 1000m depths lack zooxanthellae and may build reef-like structures or occur solitarily.

Cold-water corals are different from their warm-water counterparts because they do not contain symbiotic algae for photosynthesis and grow more slowly. Cold-water corals obtain all their energy from organic matter and zooplankton, which they catch from the currents drifting past

Cold-water corals can be found over a wide range of latitudes, from tropical to Polar Regions, and from the shallow to the deep seas.

5) Zooxanthellae loss in corals largely occur due to

1. Exposure of coral to elevated concentrations of various chemical contaminants
2. High temperature of ocean water and increased sedimentation of ocean bed

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

Zooxanthellae is what gives colour to corals and provide them food.

- Bleaching, or the paling of coral colour occurs; when (i) the densities of zooxanthellae decline and (ii) the concentration of photosynthetic pigments within the zooxanthellae fall.
- There are many causes of coral bleaching.
- Major Temperature changes, extreme low tides, tectonic uplift etc. can potentially induce bleaching.
- Moreover, Sedimentation, Fresh Water Dilution, inflow of Inorganic Nutrients (e.g. ammonia and nitrate) etc. too cause the same.

6) In which of the following trophic levels, you are likely to find the highest concentration of an organic toxin that has been found in ocean water and the aquatic animals inhabiting it?

- a) Aquatic plants
- b) Small fishes at lower trophic levels
- c) Human being who consumes sea food
- d) Large fishes at higher trophic levels

Solution: c)

Most of the organic toxins are water insoluble and non-biodegradable.

These high persistent toxins are, therefore, transferred from lower trophic level to higher trophic level through food chain.

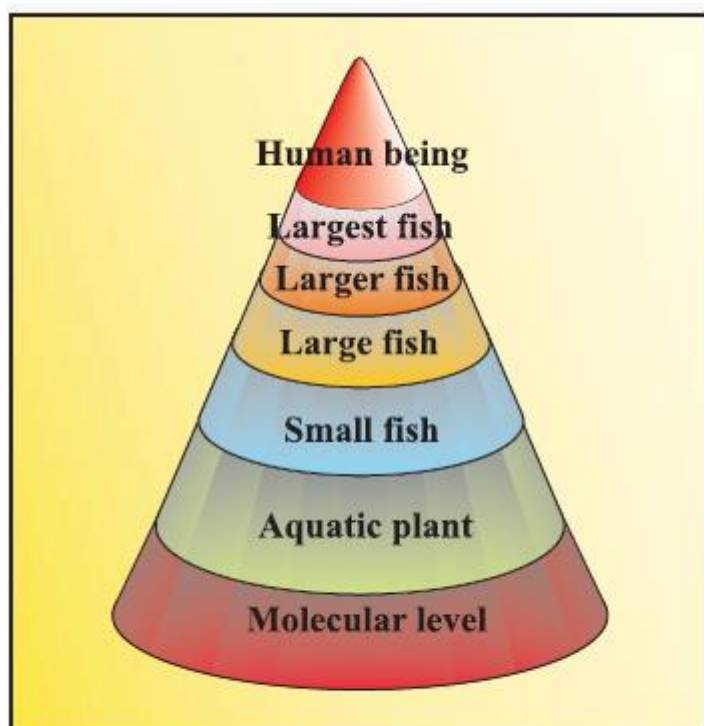


Fig. 14.3 At each trophic level, the pollutant gets 10 times concentrated.

7) Which of the following are the effects of ozone layer depletion

- 1. Causes non-melanoma skin cancer
- 2. Affects the physiological and developmental processes of plants
- 3. Reduction in Phytoplankton production.
- 4. Synthetic polymers are adversely affected

Select the correct answer code:

- a) 1, 2, 3
- b) 1, 2, 4
- c) 2, 3, 4
- d) 1, 2, 3, 4

Solution: d)

Ozone layer depletion increases the amount of UVB that reaches the Earth's surface. Laboratory and epidemiological studies demonstrate that UVB causes non-melanoma skin cancer and plays a major role in malignant melanoma development.

UVB radiation affects the physiological and developmental processes of plants.

Phytoplankton form the foundation of aquatic food webs. Phytoplankton productivity is limited to the euphotic zone, the upper layer of the water column in which there is sufficient sunlight to support net productivity. Exposure to solar UVB radiation has been shown to affect both orientation and motility in phytoplankton, resulting in reduced survival rates for these organisms. Scientists have demonstrated a direct reduction in phytoplankton production due to ozone depletion-related increases in UVB.

Synthetic polymers, naturally occurring biopolymers, as well as some other materials of commercial interest are adversely affected by UVB radiation.

8) Climatically and geographically, which among the following is the largest ecological system?

- a) Community
- b) Biome
- c) Population
- d) Ecosystem

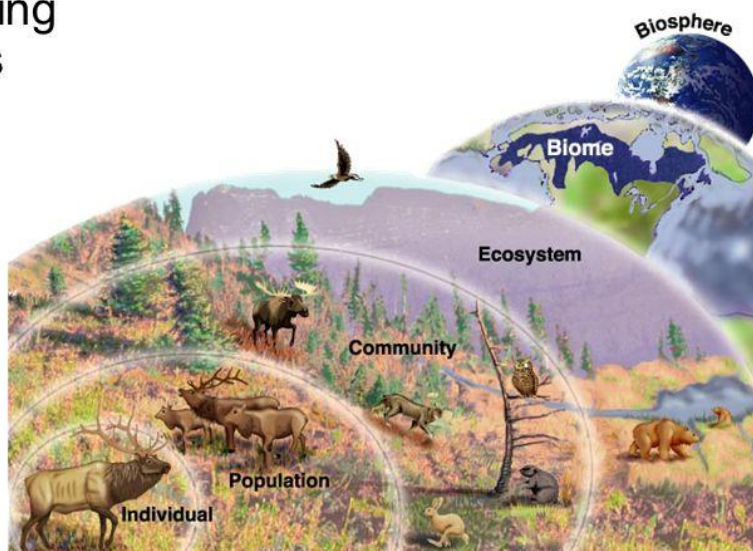
Solution: b)

A biome is even bigger than an ecosystem. A biome is a large geographical area that contains distinct plant and animal groups which are adapted to live in that environment. There can be many different habitats in a biome. Some major biomes are tundra, taiga, grasslands, deciduous forest, fresh water, desert, alpine, rainforest and ocean.

Levels of Organization

- Ecologist study organisms ranging from the various levels of organization:

- **Species**
- **Population**
- **Community**
- **Ecosystem**
- **Biome**
- **Biosphere**



9) Which of the following best describes an Indicator species?

- a) It is a species whose presence, absence or abundance reflects a specific environmental condition.
- b) It is a species non-native to the ecosystem under consideration and whose introduction causes or is likely to cause harm.
- c) It is a species that has a disproportionately large effect on the communities in which it occurs.
- d) It is a species which is introduced to reduce the level of pollution in an ecosystem.

Solution: a)

Indicator species, organism—often a microorganism or a plant—that serves as a measure of the environmental conditions that exist in a given locale.

Example – Lichens: Quality of air can be determined based on its presence.

10) Which among the following organisms are involved in nitrogen cycle?

1. Rhizobium
2. Nitrobacter
3. Nitrosomonas
4. Azotobacter

Select the correct answer code:

- a) 1, 2
- b) 2, 3
- c) 1, 2, 3
- d) 1, 2, 3, 4

Solution: d)

All the above organisms are involved in nitrogen cycle.

11) Consider the following statements regarding Vegetative Propagation.

1. Plants raised by vegetative propagation can bear flowers and fruits earlier than those produced from seeds.
2. Vegetative propagation is not possible from the plants that have lost the capacity to produce seeds.
3. Plants produced through vegetative propagation are genetically similar enough to the parent plant.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: b)

There are many plants in which parts like the root, stem and leaves develop into new plants under appropriate conditions. This property of vegetative propagation is used in methods such as layering or grafting to grow many plants like sugarcane, roses, or grapes for agricultural purposes. Plants raised by vegetative propagation can bear flowers and fruits earlier than those produced from seeds. Such methods also make possible the propagation of plants such as banana, orange, rose and jasmine that have lost the capacity to produce seeds. Another advantage of vegetative propagation is that all plants produced are genetically similar enough to the parent plant to have all its characteristics.

12) Consider the following statements.

1. Phytoplanktons are the foundation of the aquatic food web as the primary producers and they help absorb atmospheric carbon dioxide.
2. Zoo plankton feed on phytoplankton and play a vital role in transfer of organic matter from primary producers to secondary consumers.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Solution: c)

Phytoplanktons are the foundation of the aquatic food web, the primary producers. Zoo plankton feed on phytoplankton and play a vital role in food web of the food chain, nutrient recycling, and in transfer of organic matter from primary producers to secondary consumers like fishes.

13) Which of the following products can be extracted from seaweeds?

1. Agar-agar
2. Iodine
3. Alginates

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Solution: d)

Sea weeds are macroscopic algae, which mean they have no differentiation of true tissues such as roots, stems and leaves.

They grow in, shallow coastal waters wherever sizable sub-strata is available.

Seaweeds are important as food for humans, feed for animals, and fertilizer for plants.

Seaweeds are used as a drug for goiter treatment, intestinal and stomach disorders.

Products like agar-agar and alginates, iodine which are of commercial value, are extracted from seaweeds.

By the biodegradation of seaweeds methane like economically important gases can be produced in large quantities.

They are potential indicators of pollution in coastal ecosystem, particularly heavy metal pollution due to their ability to bind and accumulate metals strongly.

Rotting seaweed is a potent source of hydrogen sulfide, a highly toxic gas.

14) In which among the following ways do plastics raise the risk of disease outbreaks on coral reefs?

- a) Plastic debris stress corals through blocking out light and oxygen, thereby giving pathogens a chance to take hold
- b) Pathogens in the ocean thrive on plastic surfaces, thereby increasing their numbers and the vulnerability of corals with elevated levels of plastic pollution around reefs
- c) Coral organisms get infected by sharp plastic fragments that cut them, following which the disease spreads across the coral colony
- d) a, b and c

Solution: d)

Billions of pieces of plastic pollution are snagged on coral reefs, sending disease rates soaring, new research has revealed. The discovery compounds the damage being done to a vital habitat that already faces an existential threat from the warming caused by climate change.

Scientists examined 125,000 corals across the Asia-Pacific region, home to half the world's reefs, and found 89% of those fouled by plastic were suffering disease.

The correlation between plastic pollution and high rates of disease was very striking and the researchers think sharp plastic fragments cut the coral organisms, while plastic fabrics smother them and block out light and oxygen. Once a coral is infected, disease usually spreads across the colony.

15) An ecological pyramid is a diagrammatic presentation to describe trophic levels. How does the knowledge of ecological pyramid can help us in conservation of an ecosystem?

1. It helps us to identify bio-accumulation.
2. It helps us to identify bio-magnification.
3. It helps us to recognize an invasive species.

Select the correct answer code:

- a) 1, 3

- b) 1, 2
- c) 2, 3
- d) 1, 2, 3

Solution: b)

Ecological pyramid doesn't give evidence on introduction of new species.

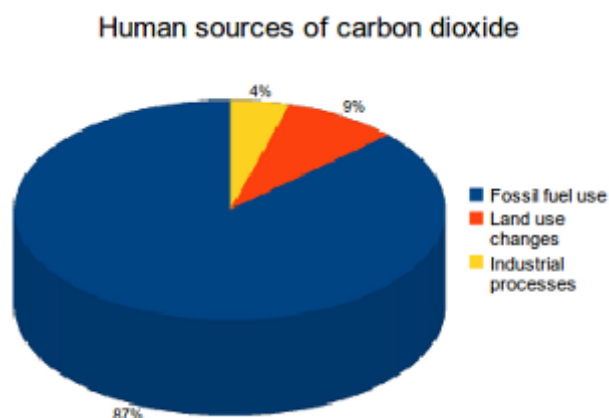
16) The largest human source of carbon dioxide emissions is from

- a) Industrial processes
- b) Combustion of fossil fuels
- c) Agricultural fields
- d) Clearing of forests

Solution: b)

Nearly 87 percent of all human-produced carbon dioxide emissions come from the burning of fossil fuels like coal, natural gas and oil.

The remainder results from the clearing of forests and other land use changes (9%), as well as some industrial processes such as cement manufacturing (4%)



17) The primary productivity of the tropical rain forest is lower when compared to that of the temperate forests. This is because of

- a) Intense leaching of soil in tropical rain forests
- b) Low microbial activity in tropical regions
- c) Dense vegetation Cover in tropical rain forests
- d) Practice of slash and burn agriculture in many tropical regions

Solution: a)

The soil is poor in nutrients and acidic due to **frequent leaching by heavy rains.**

Frequent rains wash away the top soil leaving only certain mineral and organic remains. So, if these forests are cleared, it will not yield tremendous vegetation growth as seen in tropical forests for a long time.

However, rainforests are also notable for replenishing the soil quickly with dead organic matter (e.g. leafs that fall from trees).

18) Which of the following conditions generally lead to coral bleaching?

1. Low sedimentation of ocean beds
2. Unusually warm ocean water
3. Acidification of oceans

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 1, 2, 3
- d) 2, 3

Solution: d)

Coral bleaching causes corals to expel tiny photosynthetic algae, draining them of their colour. It calcifies the corals to turn into white. Algae are vital to the coral, which uses the organic products of photosynthesis to help it grow. The loss of algae makes it vulnerable to disease and it will eventually die. When a coral bleaches, it is not dead.

Conditions required for growth of corals are warm tropical oceans with minimum temperature of 20 degree; transparent parts of ocean bodies; Oceanic water must be free of sedimentation; it should have relatively low salinity etc. When these conditions are vitiated it may lead to coral bleaching.

19) What is/are the contributions of Coral Reefs to an ecosystem?

1. These support fish production by providing them with food and shelter.
2. They control the concentration of carbon dioxide in the lower atmosphere and in the sea water.
3. They check sea waves against going towards sea coasts.
4. They have the highest primary productivity amongst all ecosystems.

Select the correct answer code:

- a) 1, 3, 4
- b) 1, 2, 3
- c) 2, 4
- d) 1, 2, 3, 4

Solution: b)

The excess CO₂ is used for calcification of reefs and in this way the additional CO₂ is taken care of. So, coral reefs are helpful in controlling Green House Effect as they absorb carbon dioxide.

They usually form the first barrier against a tsunami or cyclone or sea waves by blocking the force of the wave. They have the highest primary productivity within the sea, not outside. Amongst all, estuaries are the one with the highest primary productivity.

20) Consider the following statements regarding the application of algae.

1. Used to make Biodiesel and Bioethanol.
2. It is a complete protein with essential amino acids.
3. Used as fertilizers and soil conditioners.
4. Used in Wastewater Treatment.

Which of the above statements is/are correct?

- a) 1, 2, 3
- b) 2, 3, 4
- c) 1, 2, 4
- d) 1, 2, 3, 4

Solution: d)

Algae can be used to make Biodiesel and Bioethanol.

It is a complete protein with essential amino acids (unlike most plant foods) that are involved in major metabolic processes such as energy and enzyme production.

They are used as fertilizers, soil conditioners and are a source of livestock feed.

Algae are used in Wastewater Treatment facilities, reducing the need for greater amounts of toxic chemicals than are already used.

Algae can be used to capture fertilizers in runoff from farms.