



AANKALAN-II-24

General Studies-I

SUB. CODE 02

Answer Key

1. (b)	26. (c)	51. (b)	76. (b)	101. (d)	126. (b)
2. (c)	27. (d)	52. (a)	77. (c)	102. (c)	127. (a)
3. (b)	28. (a)	53. (c)	78. (c)	103. (d)	128. (a)
4. (d)	29. (a)	54. (c)	79. (a)	104. (c)	129. (d)
5. (b)	30. (a)	55. (b)	80. (b)	105. (d)	130. (d)
6. (c)	31. (c)	56. (a)	81. (b)	106. (a)	131. (b)
7. (c)	32. (b)	57. (a)	82. (b)	107. (c)	132. (b)
8. (d)	33. (c)	58. (c)	83. (a)	108. (c)	133. (b)
9. (c)	34. (b)	59. (a)	84. (c)	109. (a)	134. (b)
10. (c)	35. (a)	60. (d)	85. (a)	110. (b)	135. (a)
11. (c)	36. (b)	61. (d)	86. (c)	111. (b)	136. (b)
12. (d)	37. (d)	62. (a)	87. (b)	112. (c)	137. (a)
13. (c)	38. (a)	63. (a)	88. (a)	113. (b)	138. (d)
14. (d)	39. (c)	64. (c)	89. (b)	114. (d)	139. (a)
15. (c)	40. (b)	65. (c)	90. (a)	115. (a)	140. (b)
16. (b)	41. (c)	66. (b)	91. (b)	116. (d)	141. (c)
17. (a)	42. (c)	67. (d)	92. (a)	117. (b)	142. (d)
18. (a)	43. (c)	68. (b)	93. (b)	118. (d)	143. (b)
19. (d)	44. (c)	69. (c)	94. (b)	119. (d)	144. (d)
20. (b)	45. (c)	70. (c)	95. (a)	120. (b)	145. (b)
21. (b)	46. (a)	71. (b)	96. (a)	121. (c)	146. (c)
22. (a)	47. (d)	72. (d)	97. (a)	122. (c)	147. (d)
23. (d)	48. (c)	73. (a)	98. (d)	123. (d)	148. (a)
24. (a)	49. (c)	74. (b)	99. (a)	124. (c)	149. (c)
25. (d)	50. (d)	75. (b)	100. (b)	125. (d)	150. (b)

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General Studies-I

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1. (b)

Comparison between the British Monarch and Indian President

British Monarch	Indian President
The position of the King is hereditary	Elected
King enjoys absolute immunity; it's said that King can do no wrong	In India, the President can be impeached for violation of the Constitution.
King has no discretionary powers. He/She is known as 'Golden Zero'	<p>In India, there was a lack of clarity w.r.t. the Indian President. There was confusion about whether he/she has any discretionary power or is merely a rubber stamp.</p> <ul style="list-style-type: none"> • The 24th Amendment clarifies that he/she doesn't have any discretionary powers. The real power lies with the PM, while the President is merely a 'rubber stamp'. • The 44th Amendment Act again changed the stand, providing some scope for Presidential discretion. He/She could now send the request back to the CoM, though only once. <p>He also possesses situational discretionary power in case of a hung assembly (when no single party or alliance is in a situation to form a government) he is free to choose the leader of the house.</p>

2. (c)

Sources borrowed from American Constitution in Indian Constitution are:-

- Fundamental Rights
- Impeachment of the President
- Office of Vice Presidential
- Provision for the removal of judges of the Supreme Court or High Courts
- Independence of the Judiciary

3. (b)

Drafting Committee-

- The Drafting Committee was formed in the Constituent Assembly on 29 August 1947.
- Dr. BR Ambedkar was made the chairman of the drafting committee.
- The full name of BR Ambedkar is Bhimrao Ramji Ambedkar.

Chairman and members of Drafting Committee-

The following are the chairman and members of the drafting committee of the Constituent Assembly.

- Dr. Bhimrao Ambedkar (President)
- N. Gopaldaswami Iyengar
- Alladi Krishnaswami Iyer



- Sir Syed Muhammad Saadullah
- K.M. Munshi
- N Madhava Rao
- T.T. Krishnamachari.
- Special- At the time of formation, the only Congressman in the Drafting Committee was K.M. Munshi as T.T. Krishnamachari joined later.

4. (d)

Cripps Mission

In March 1942, Sir Stafford **Cripps**, a **member of** the British **cabinet** came with a draft declaration. These proposals were to be adopted at the end of the Second World War if accepted by Congress and the Muslim League. Proposal includes:

- The Constitution of India was to be framed by a Constituent Assembly elected for the purpose by the Indian people.
- The Constitution should provide India, with a **dominion status**.
- There should be one Indian Union comprising all the provinces and Indian states.
- Any province (or Indian **state**) **not accepting the Constitution would be free to retain its constitutional position existing at that time**, and with such a non-acceding province, the British Government could enter into separate constitutional arrangements.

While the proposal of **residuary powers with states** was put forward in **cabinet mission** instead of Cripps mission.

5. (b)

About Election Commission

- The Election Commission is a permanent constitutional body. It was established on **January 25, 1950**.
- The provisions related to the Election Commission are mentioned in **Article 324 of the Constitution**.
- Initially the Commission had only one Chief Election Commissioner.
- At present it consists of one Chief Election Commissioner and two Election Commissioners.
- For the first time, two additional commissioners were appointed on October 16, 1989 but their tenure lasted only till January 1, 1990.
- Subsequently, two additional Election Commissioners were appointed on October 1, 1993 and since then the concept of the multi-member Commission has been in practice, in which decisions are taken on the basis of majority.
- The Chief Election Commissioner and Election Commissioners are appointed by the President of India.
- A general election shall be held for the purpose of constituting a new House of the People on the expiration of the duration of the existing House or on its dissolution.

For the said purpose the President shall, by one or more notifications published in the Gazette of India on such date or dates as may be recommended by the Election Commission, call upon all Parliamentary constituencies to elect members

6. (c)

The Preamble of the Indian Constitution:

“We, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a



SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:
 JUSTICE, social, economic and political;
 LIBERTY of thought, expression, belief, faith and worship;
 EQUALITY of status and of opportunity; and to promote among them all;
 FRATERNITY assures the dignity of the individual and the unity and integrity of the Nation;
 IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November 1949, do HEREBY ADOPT,
 ENACT AND GIVE OURSELVES THIS CONSTITUTION.”

7. (c)

Statement 1 is true because Directive Principles of State Policy, as outlined in Part IV of the Indian Constitution, are guidelines to the central and state governments in India that are intended to be taken into consideration while framing laws and policies. They are not enforceable by any court.

Statement 2 is not true because the non-enforceability of Directive Principles is not due to their importance being considered less than the Fundamental Rights. Instead, Directive Principles are not enforceable by courts because they are meant to be guidelines to help govern the state in making laws and policies that aim towards a social welfare state.

They are intended to be aspirations to guide the state and not rights enforceable by law, hence ensuring that the governance can adapt them flexibly as per the economic capacity and development status of the state.

8. (d)

Creation of states:

State	Year of establishment
1. Nagaland	1952
2. Andhra Pradesh	1953
3. Kerala	1956
4. Maharashtra	1960
5. Gujrat	
6. Haryana	1966
7. Meghalaya, 8. Manipur and 9. Tripura	1971
10. Karnataka	1973
11. Sikkim	1975
12. Mizoram 13. Arunachal Pradesh 14. Goa	1986
15. Chhattisgarh 16. Uttarakhand 17. Jharkhand	2000
18. Telangana	2014

9. (c)

The Citizenship Act, of 1955 confers the right to acquire citizenship in India in the following five ways-

- By Birth



- By Descent
- By Registration
- By Naturalization
- By acquisition of territory

10. (c)

Article 280 and Article 281 of the Constitution of India deal with the provisions related to the Finance Commission of India (FCI).

Article No.	Subject Matter
Article 280	Finance Commission
Article 281	Recommendations of the Finance Commission

- The Finance Commission of India is required to make recommendations to the President of India on the following matters:
 - The distribution of the net proceeds of taxes to be shared between the Centre and the States, and the allocation between the States of the respective shares of such proceeds.
 - The principles that should govern the grants-in-aid to the States by the Centre, i.e., out of the Consolidated Fund of India.
 - The measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and the Municipalities in the State on the basis of the recommendations made by the State Finance Commission.
 - Any other matter referred to it by the President in the interests of sound finance.

11. (c)

According to the constitutional amendments made post the 44th amendment, the President can proclaim an Emergency under Article 352 only upon receiving a written recommendation from the Cabinet.

This was introduced to ensure that such a significant decision is taken collectively and not merely at the discretion of the President or the Prime Minister.

The Emergency must be approved by both houses of Parliament within one month to remain valid. It requires approval by special majority from both the houses to remain in force. However Lok Sabha can remove it solely.

While some rights can be suspended, not all Fundamental Rights are automatically suspended during an Emergency under Article 352. Article 21 can not be suspended even during emergency.

12. (d)

In the Maneka Gandhi case, the Supreme Court also ruled that “life” under Article 21 meant more than a mere “animal existence”. It would include the right to live with human dignity and all other aspects, which made life “meaningful, complete and worth living”. Subsequent judicial interpretation has broadened the scope of Article 21 to include within it several rights, including:

- Right to Elementary Education
- Right to livelihood
- Right to life with dignity
- Right to water
- Right to speedy justice
- Right to privacy
- Right to health



- Right to travel abroad
- Right to shelter
- Right to free Legal aid
- Right against bonded labour

Note: In the **Hussainara Khatoon Case 1979**, which saw the emergence of PIL in India, it was laid down that speedy trial is the essence of criminal justice and, therefore, the Supreme Court for the first time talked of the necessity of **free legal aid to poor persons** to make the justice system mount a meaningful protection of their rights.

Right to travel within the country falls under Article 19 of the Indian Constitution.

13. (c)

Fundamental Duties incorporated in Article 51A, by the 42nd and 86th Amendments of the Indian Constitution are as follows:

1. to abide by the Constitution and respect its ideals and institutions, the National Flag and the National anthem;
2. to cherish and follow the noble ideals which inspired our national struggle for freedom;
3. to uphold and protect the sovereignty, unity and integrity of India;
4. to defend the country and render national service when called upon to do so;
5. to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
6. to value and preserve the rich heritage of our composite culture;
7. to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures;
8. to develop the scientific temper, humanism and the spirit of inquiry and reform;
9. to safeguard public property and to abjure violence;
10. to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
11. who is a parent or guardian, to provide opportunities for education to his child or, as the case may be, a ward between the age of six and fourteen years.

To provide early childhood care for children until they attain age of 6 is a DPSP under Article 45 of the Indian Constitution.

14. (d)

Anti-Defection Law was passed in 1985 by 52nd Amendment to the Constitution of India. It was introduced as the 10th Schedule to the Constitution. The law came into effect on March 18, 1985

It added the **Tenth Schedule** to the Indian Constitution, which contains the provisions related to the Anti-Defection Law.

Later, **the 91st Amendment Act of 2003 made some changes to certain provisions of the Anti-Defection Law (ADL).**

Grounds for disqualification:

- If an elected member gives up his membership of a political party voluntarily.
- If he votes or abstains from voting in the House, contrary to any direction issued by his political party.
- If any member who is independently elected joins any party.
- If any nominated member joins any political party after the end of 6 months.



- The decision on disqualification questions on the ground of defection is referred to the Speaker **or the Chairman of the House, and his/her decision is final.**
- All proceedings in relation to disqualification under this Schedule are considered to be proceedings in Parliament or the Legislature of a state as is the case.

Exemptions: There are certain situations where defection is not considered grounds for disqualification. For example, if a legislator, as a member of one political party, joins another party after a merger between the two parties, it may not lead to disqualification.

15. (c)

To be qualified for election as President, a person must:

- be a citizen of India by birth or naturalisation.
- have completed 35 years. of age
- be qualified to contest elections as a member of the Lok Sabha (House of the People)
- not hold any office of profit under the Government of India or the Government of any State or any local authority.

16. (b)**Executive Powers of Governor**

- The executive power of the State is vested in the Governor and is to be exercised by him either directly or through officers subordinate to him by the Constitution (Art. 154).
- All executive actions of the government of a State are formally taken in the Governor's name. He can make rules specifying how the orders and other instruments made and executed in his name shall be authenticated.
- He appoints the Chief Minister, the other subordinate ministers, and the Advocate General of the State and they hold office during his pleasure.
- The Governor appoints the State Election Commissioner and his conditions of service and tenure of office. However, the SEC can be removed only in the manner and on the grounds of a Judge of a High Court.
- He appoints the Chairman and members of the State Public Service Commission. However, they can be removed by the President of India and not by the Governor.
- He can seek any information relating to the administration of the affairs of the state and proposals for legislation from the Chief Minister.
- He can make a recommendation to the President to impose a constitutional emergency in the state under Article 356.
- He acts as the chancellor of universities in the state. He also appoints the vice-chancellors of universities in the state.

17. (a)

Regulating act of 1773 got introduced to establish a central administrative system in British India. The act was brought to regulate the activities of the British East India company. It was an initiative of the British parliament to bring an administrative reform in British India.

- **This act permitted the company to retain its territorial possessions in India**
- It changed the post of Governor of Bengal to "**Governor-General of Bengal**".
- **Establishment of Supreme Court in Fort Williams in Calcutta**
- **Sir Elizah Impey** was the first judge of this court
- For the first time, **the British cabinet was given the right to exercise control over indian affairs**



Regulating Act of 1773 is of great importance as -

- It was the first step taken by the British government to control and regulate the affairs of the East India Company in India
- It recognised, for the first time, the political and administrative functions of the company.
- It laid the foundations of central administration in India.

18. (a)

State/U.T.	RS
Andhra Pradesh (AP)	11
Arunachal Pradesh (AR)	1
Assam (AS)	7
Bihar (BR)	16
Chhattisgarh (CHT)	5
Goa (GOA)	1
Gujarat (GJ)	11
Haryana (HR)	5
Himachal Pradesh (HP)	3
Jammu & Kashmir (J & K)	4
Jharkhand (JHK)	6
Karnataka (KAR)	12
Kerala (KR)	9
Madhya Pradesh (MP)	11
Maharashtra (MH)	19
Manipur (MN)	1
Meghalaya (MGH)	1
Mizoram (MZ)	1
Nagaland (NG)	1
Odisha (OR)	10
Punjab (PB)	7
Rajasthan (RJ)	10
Sikkim (SK)	1
Tamil Nadu (TN)	18
Telangana (TG)	7
Tripura (TR)	1
Uttar Pradesh (UP)	31
Uttarakhand (UTK)	3
West Bengal (WB)	16
National Capital Territory of Delhi (DL)	3
Puducherry (PUD)	1
Nominated (NOM.)	12
Total:	245

19. (d)

The independence of the Supreme Court is secured in several ways-

- The Judges of the Supreme Court are appointed by the President in consultation with the collegiums headed by the Chief Justice of the Supreme Court.
- By laying down that Judges of the Supreme Court shall not be removed except by an order of the President after an address by the Parliament (supported by the majority of the membership of the house and not less than two-thirds of the members present and voting) is presented to him. (Art.124(4))
- The salaries, allowances, privileges, leave and pension of judges of the Supreme Court are determined from time to time by Parliament. They cannot be varied to the disadvantage of the judges.



- The salaries, allowances and pensions of the staff are charged to the Consolidated Fund of India and thus are non-votable by the Parliament. (Art. 146)
- The conduct of judges in the discharge of their duties cannot be discussed in Parliament or a state legislature except when an impeachment motion is under consideration.
- The Retired Judges are prohibited from pleading or acting in any court or before any authority within the territory of India. This removes the chances of any biased decision for any future favour.
- The Supreme Court can punish anyone for its contempt. Its actions, thus, cannot be criticized or opposed by anybody. It ensures the authority, Dignity and Honour of the Supreme Court.
- The Chief Justice of India can appoint officers and staff of the Supreme Court without any interference from the executive.
- The parliament cannot curtail the jurisdiction and powers of the Supreme Court; however, the parliament can extend its power and jurisdiction.
- The Constitution directs the state to separate the judiciary from the executive in the public services (Art 50). For its implementation, the judicial powers of executives are taken away after the enactment of Cr. P.C).

20. (b)

Original jurisdiction

The court has **exclusive** original jurisdiction over under **Article 131**:

1. Dispute between the Government of India and one or more States.
2. Dispute between the Government of India and any State or States on one side and one or more States on the other.
3. Between two or more States, if the dispute involves any question on which the existence or extent of a legal right depends.

This jurisdiction of the Supreme Court **does not extend to the following**:

- (a) Inter-State Water disputes;
- (b) matters referred to the Finance Commission;
- (c) adjustment of expenses between the Centre and the States;
- (d) ordinary dispute of a commercial nature;
- (e) dispute arising out of a pre-Constitution treaty or agreement;
- (f) any treaty or agreement, which specifically provides that that the said jurisdiction does not extend to the dispute.

21. (b)

Appointment of District Judges (Art.233)

The appointment, posting and promotion of district judges in a state are made by the Governor of the State, in consultation with the High Court. The qualifications of a person for appointment to the post are:

1. He should not already be in the service of the central or state government.
2. He should have been an advocate or pleader for not less than seven years
3. He should be recommended by the high court for appointment.

22. (a)

Article 39 A of the Constitution of India provides for free legal aid to the poor and weaker sections of society, to promote justice based on equal opportunity. To receive those services under NALSA, the person acquiring them should fall under the following categories:

- People with disability



- Women and children
- People who are members of SC & ST communities
- Victims of poverty (beggars) and human trafficking
- Industrial workmen
- People under custody
- People who are victims of natural disasters, caste or ethnic violence, etc.
- People with an annual income of less than 1 lakh.

23. (d)

Sarkaria Commission was appointed by the government of India in 1983. It was a three-member commission on center-state relations. R.S. Sarkaria headed the commission. The commission's objective was to examine and review existing arrangements between the center and states.

Recommendations of the Sarakaria Commission

1. A permanent Inter-State Council called the Inter-Governmental Council should be set up under Article 263.
2. Article 356 (President's rule) should be used very sparingly, in extreme cases as a last resort when all the available alternatives fail.
3. The institution of All-India Services should be further strengthened and some more such services should be created.
4. **The residuary power of taxation should continue to remain with the parliament, while the other residuary powers should be placed in the concurrent list.**
5. When the President withholds his assent to the state bills, the reason should be communicated to the state government.
6. The Zonal Councils should be constituted fresh and reactivated to promote the spirit of federalism.
7. The Centre should have powers to deploy its armed forces, even without the consent of states. However, the states should be consulted.
8. The Centre should consult the states before making a law on a subject of the Concurrent List.
9. The procedure of consulting the Chief Minister in the appointment of the State Governor should be prescribed in the Constitution itself.
10. The Governor's term of five years in a state should not be disrupted except for extremely compelling reasons.
11. Steps should be taken to uniformly implement the three-language formula in its true spirit.
12. No autonomy in for radio and television but decentralization in their operations.
13. The Commissioner for Linguistic Minorities should be activated

24. (a)

Compulsory Provisions of the 73rd Constitutional Amendment Act

- **Three-Tier System:** Establishment of Panchayats at the village, intermediate, and district levels.
- **Gram Sabha:** Organization of Gram Sabha in a village or group of villages.
- **Direct Elections:** Direct elections to all seats in Panchayats at all three levels.
- **Reservation of Seats:** Reservation of seats for Scheduled Castes (SCs), Scheduled Tribes (STs), and women is compulsory but reservation for OBC is voluntary.
- **Minimum Age:** The minimum age for contesting elections to Panchayats is 21 years.
- **Tenure:** Fixed tenure of five years for Panchayats.



- **State Election Commission:** Establishment of a State Election Commission to conduct elections to Panchayats.
- **Finance Commission:** Constitution of a State Finance Commission every five years to review the financial position of Panchayats.

25. (d)

Powers and Functions of the Election Commission of India

1. To determine the territorial areas of the electoral constituency throughout the country based on the Delimitation Commission Act of the Parliament.
2. To prepare and periodically revise electoral rolls and to register all eligible voters.
3. To notify dates and schedules of elections and to scrutinise nomination papers.
4. To appoint officers for enquiring into disputes relating to electoral arrangements.
5. To determine the code of conduct to be observed by parties and candidates at the time of elections.
6. To cancel polls in the event of rigging, booth capturing, violence and other irregularities.
7. To request the President or the Governor to relinquish staff necessary for conducting elections.
8. To register political parties for elections allot election symbols to them and grant them the status of national or state parties, based on poll performance. But ECI can not deregister any political party.
9. To work for Voter Education and Electoral participation.

26. (c)

Taxes and duties levied by the Union, but collected and appropriated by the States: Stamp duties and duties of excise on medical and toilet preparations are levied by the Government of India, but collected and appropriated by the States, within which such duties are leviable, except in the Union Territories, where they are collected by the Union Government (Art. 268). The proceeds of these duties levied within any State are assigned to that State only and do not form a part of Consolidated Fund of India.

Service tax levied by the Centre, but collected and appropriated by the Centre and the States: Taxes on services are levied by the Centre, but their proceeds are collected and appropriated by both the Centre and the States. Principles of their collection and appropriations are formulated by the Parliament.

Taxes levied and collected by the Union, but assigned to the States within which they are leviable (Art.269):

- (a) Succession duty in respect of property, other than agricultural land.
- (b) Estate duty in respect of property, other than agricultural land.
- (c) Terminal taxes on goods or passengers carried by railways, sea or air.
- (d) Taxes on railway fares and freights taxes on transactions in Stock Exchanges.

Taxes levied and collected by the Union and distributed between the Union and the States (Art.270): Certain taxes are levied as well as collected by the Union, but their proceeds are divided between the Union and the States in a certain proportion in order to effect an equitable distribution of the financial resources.

This category includes all the taxes and duties referred to in the Union List, except the three categories mentioned above, any surcharge and any cess levied for specific purposes. The manner of distribution of net proceeds of these taxes is prescribed by the President, on the recommendation of the Finance Commission.

Surcharge on certain taxes (Art.271): The Parliament is, authorized to levy surcharge on the taxes mentioned in the above two categories (Art.369 and Art.370) and the proceeds of such surcharges go to the Centre exclusively and are not shareable.



Taxes levied and collected and retained by the states: These are the taxes enumerated in the State List (20 in number) and belong to the States exclusively.

Grants-in-Aid: The Parliament may make grants-in-aid from the Consolidated Fund of India to such States as are in need of assistance (Art.275), particularly for the promotion of welfare of tribal areas, including special grant to Assam.

These are called statutory grants and made on the recommendation of the Finance Commission. Apart from this, Art.282 provides for discretionary grants by the Centre and States both, for any public purposes. The Centre makes such grants on the recommendation of the Planning Commission (an extra-constitutional body).

27. (d)

To ensure a regular supply of cheap foodgrains Allauddin took the following measures:

- The peasants were forced to sell their foodgrains at a low price to Banjaras
- To ensure that there was no hoarding, all the banjaras were registered, and their agents and their families were held collectively responsible for any violations.
- The state itself set up warehouses and stocked them with foodgrains which were released whenever there was a famine or a threat of a shortfall in supply.
- Alauddin kept himself constantly informed of everything and very harsh punishment was given if any shopkeeper charged a higher price, or tried to cheat by using false weights and measures.

28. (a)

In the context of medieval history of Uttar Pradesh

- Agra was founded by Sultan Sikander Lodi in 1504.
- The founder of the Mughal Empire Babur made Agra his capital and but late the fort of Agra was built by Akbar.
- The capital from Agra to Delhi was transferred during Shahjahan.
- Nur Jahan before getting married to Jahangir was wife of Sher Afghan who was a Persian adventurer.
- The women of Haram used to watch animal war from Musamman Burj located in Agra. Meena market used to be held in Agra itself.
- Jahangir first met Nur Jahan in this market
- After his death Jahangir was attracted to her beauty and intellect and decided to marry her.
- She built the tomb of his father Imat Ud Daulah in Agra.
- Other facts
- Taj Mahal and Moti Masjid of Agra were built by Shah Jahan, symbolizes the superiority of architecture.

29. (a)

1. Arab traveller Al-Masudi visited India during the reign of Indra-III. Indra-III was one of the Greatest Rashtrakuta rulers. Al-Masudi has given an extensive account of India in his work 'Muruj-ul-Zehab'.
2. Domingo Paes, a Portuguese traveller who visited Vijayanagara during the period of Krishnadeva Raya went on to write an account of the military forces of the Vijayanagara empire.
3. Abdur Razzak [1413 - 1482] Abdur Razzak was an Islamic scholar and a historian who visited the Vijayanagara Kingdom in India at the time of Dev Raya II, the greatest ruler of the Sangama dynasty.
4. Niccolo Conti visited Vijayanagara in 1420 AD during the reign of Devaraya I. Niccolo Conti was an Italian merchant, explorer, and writer.



30. (a)

Bahmani rulers are dependent for military support on their **amirs**. There were two groups in the ranks of amirs:

1. The Deccanis were immigrant Muslims and had been staying for a long time in the Deccan region.
2. The Afaqis or Pardesis who had come from Central Asia and settled in the Deccan region recently.

31. (c)

Post in Martaha Administration	Responsibility
Peshwa	Pant Pradhan finance and general administration (Head of Council)
Sar-i-Naubat or Senapati	Military commander
Amatya/Majumdar	Accountant General
Waqenavis	Intelligence and police, posts, historical archives, and household affairs
Surnavis or Chitnis or Sachiv	General Secretary who also overlooked official correspondence
Sumant/Dabir	Master of Royal Ceremonies and Foreign Affairs
Nyayadish	Justice.
Pandit Rao	Charities and Religious affairs

32. (b)

Homologous Organs

- Homologous organs are organs that are similar in structure and origin but may look very different and perform different functions.
- The forelimbs of vertebrates are a good example of homologous organs.
- They are built on the same fundamental plan yet they appear different and perform different functions.

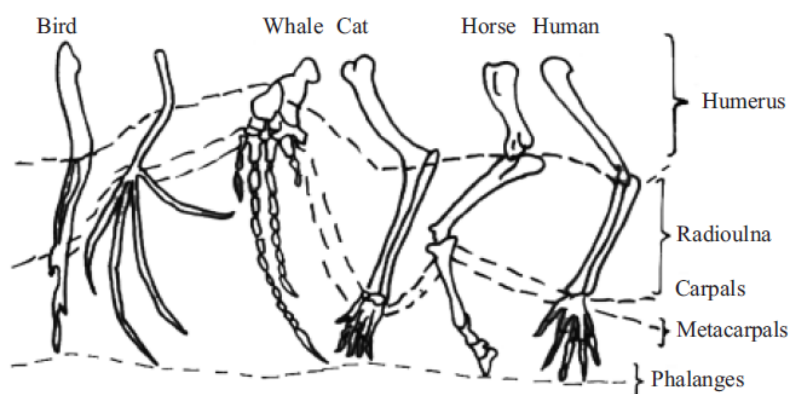


Fig. 1.5 Homology and adaptation in bones of the forelimbs of some vertebrates

Analogous organs

- The structures which are functionally similar but structurally different are called analogous organs.
- The wing of an insect, and that of a bird or bat or pterodactyl are examples of analogous organs



33. (c)

The various taxonomic categories are given below :

- **Species:** A group of individuals of one kind that can interbreed to produce fertile offspring.
- **Genus:** Group of species resembling each other in several features indicating common ancestry.
- **Family:** Group of genera (singular-genus) resembling each other. e.g. *Felis domestica* (the cat) and *Panthera tigris* (the tiger), both belong to the family Felidae.
- **Order:** Includes families showing similar characteristics.
- **Class:** Includes related orders.
- **Phylum:** Includes related classes

34. (b)

Characteristics	Prokaryotes	Eukaryotes
1. Size	0.1-10 μm	10-100 μm (larger volume)
2. Genetic material	Circular DNA, no linear DNA, no histones associated with DNA, nucleoid form, no nuclear membrane	Histones present on which DNA molecule wrapped, well defined linear chromosomes, with free terminal end nuclear membrane present
3. Site of nuclear material	DNA in cytoplasm	DNA inside distinct nucleus
4. Organelles	No membrane bound organelles	Mitochondria, golgi body, lysosomes present in the cell
5. Cell wall	Always present, Contains peptidoglycan	None in (animals) and made of cellulose/chitin in plants and fungi
6. Respiration	By mesosomes	By mitochondria
7. Reproduction	Mostly asexual e.g. bacteria and cyanobacteria (blue-green algae)	Asexual and sexual e.g. Protoctista, fungi, plants Animals

35. (a)

- **Agaricus bisporus, commonly known as the cultivated mushroom, is a basidiomycete mushroom native to grasslands in Eurasia and North America. It is cultivated in more than 70 countries and is one of the most commonly and widely consumed mushrooms in the world.**

It also contains anti-inflammatory elements. It is said in the mountains that consuming it keeps heart diseases away

- Fly agaric, (*Amanita muscaria*), [poisonous mushroom](#) in the family Amanitaceae (order [Agaricales](#)) found in [forests](#), pastures, and fields throughout [temperate](#) and boreal regions of the Northern Hemisphere. It is [hallucinogenic](#) and was once used as a fly poison. The large [iconic](#) mushroom is usually bright red to orange with white “warts” and a white underside
- *Amanita phalloides* ([/æməˈnaɪtə fəˈlɔɪdiːz/](#)), commonly known as the death cap, is a deadly poisonous [basidiomycete fungus](#), one of many in the genus [Amanita](#). Originating in [Europe,\[1\]](#) but later introduced to other parts of the world since the late twentieth century.

Some fungi such as mushrooms, morels, puffballs, and truffles are used as delicious foods or appetizers, while others are used in the production of certain foods and beverages due to their fermentable ability.

36. (b)

Causes of colour/bitterness in vegetables- effect

- Red colour in carrots - anthocyanine
- Yellow colour in turmeric - Karkamin



- Crop in chilli - Capsacin
- Radish pungency - isocyanate
- Smell in onion - alile propile dysulfite
- Red colour in onion - anthocyanine,
- Red colour in chili – capsenthin

37. (d)

Name of Bacterium	Disease Caused
<i>Vibrio cholera</i>	Cholera
<i>Salmonella typhi</i>	Typhoid
<i>Clostridium tetani</i>	Tetanus
<i>Corynebacterium diphtheriae</i>	Diphtheria
<i>Mycobacterium tuberculosis</i>	Tuberculosis

38. (a)

Bryophytes are amphibians of the plant kingdom as they complete their life cycle in both water and on land. These mainly grow in damp, shady places, especially in the hills.

- They are embryophytes that do not have vascular tissues (neither xylem nor phloem), whereas multicellular sporophytes are always borne on the gametophytes.
- No true leaves and roots, as their independent plant body is gametophytic (haploid).
- Sex organs are **jacketed** as they are always surrounded by one or several layers of sterile cells.

39. (c)

About Gravitational Waves:

- Gravitational waves are ripples or vibrations in the fundamental structure of spacetime. For example, when a pebble is dropped into a pond, the resulting ripples are analogous to gravitational waves, but instead of through the water, they propagate through the fundamental structure of the universe.
- In 1916, Albert Einstein predicted the existence of gravitational waves within his theory of general relativity.
- Gravitational wave research, as evidenced by the 2017 Nobel Prize awarded for the first detection using the Laser Interferometer Gravitational-Wave Observatory (LIGO), holds immense potential for scientific breakthroughs.
- Recently, India has given its approval to build the third node of LIGO in Hingoli district of Maharashtra. Hence, statement 3 is not correct.

40. (b)

Characteristic features of aves are:

- Warm-blooded (homoiothermal, also called endothermal i.e. body temperature remains constant).
- Body covered with feathers, scales are present only on hind limbs.
- The body is divisible into three parts: head, neck and trunk.
- Jaws with horny beak, no teeth.
- Hind limbs with four digits adapted for perching, walking or swimming
- Bones with air spaces to make the skeleton light (pneumatic bones).
- Forelimbs modified into wings for flight.
- Heart 4-chambered, lungs for respiration connected with air-sacs.



- Voice-box or **syrinx** (present at the junction of trachea and bronchi).
- Only the left ovary and oviduct are present in females (economy in body weight.)
- All oviparous (lay eggs), eggs with much yolk and calcareous shell.
- **Example:** *Struthio* (Ostrich), *Abteryx* (Kiwi), *Pavo* (Peacock) *Columba*, (Pigeon), *Corvus* (Crow), etc.

41. (c)

A non-contact force is a force that acts on an object without making physical contact with it. It is, in other words, a force that operates at a distance.

Noncontact forces include gravitational force, electrostatic force, magnetic force, and electrochemical force.

Friction force on the other hand is contact force.

42. (c)

List I (Enzyme)	List II (Function)
A. Pepsin	1. Converts protein into proteoses and peptones
B. Amylase	2. Converts starch into maltose
C. Trypsin	3. Converts peptones into amino acids
D. Lipase	4. Converts fats into fatty acids

43. (c)

The second law of thermodynamics is a physical law that describes the relationship between heat and energy, and states that heat naturally flows from hotter to colder regions. The law also states that entropy increases over time in an isolated system, and that entropy changes can't be negative.

Statement 1 is true as the second law of thermodynamics indeed states that the total entropy of an isolated system can never decrease over time; it only increases or remains constant in ideal cases.

Statement 2 is not true because the second law of thermodynamics does not imply that energy decreases over time in a closed system; rather, it refers to the dispersal of energy into less useful forms.

44. (c)

Shifting cultivation or shifting farming is a method of agriculture in which primitive people of the tropical forest shift their plots of agricultural land from one part to another by clearing the forest through fire. It is sometimes called migratory primitive agriculture.

Name of shifting agriculture - country/place where it is practised

- Milpa - Mexico and Central America
- Conuco - Venezuela
- Roca - Brazil
- Masole - Congo and Central Africa
- Ladang - Indonesia and Malaysia
- Ray - Vietnam
- Taungya - Myanmar
- Chena - Sri Lanka
- Caingin – Philippines



45. (c)

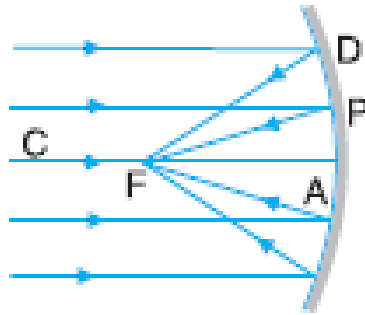
When catching a fast-moving cricket ball, fielder pulls his hands back to reduce the force of impact and prevent injury

By doing so the fielder increases the time duration in which the momentum of the ball becomes zero.

As the rate of change of momentum decreases, a small force is required to hold the catch. So the hands of the fielder do not get hurt.

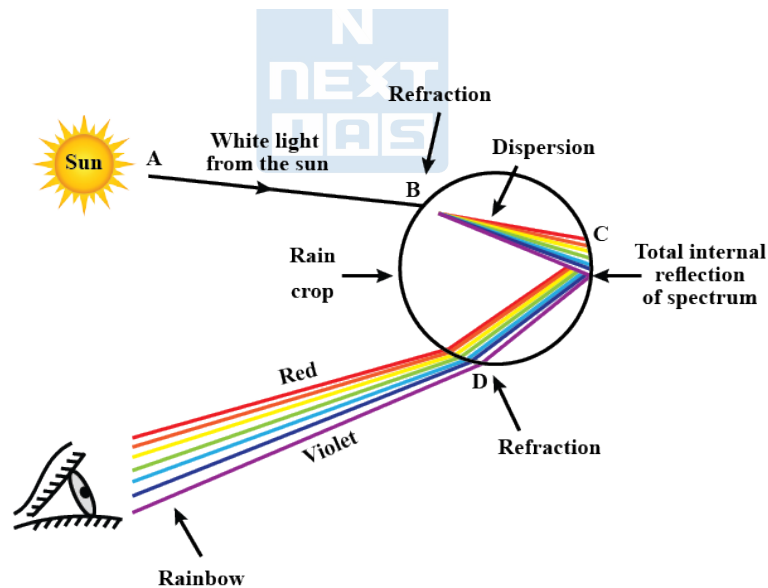
46. (a)

Image formed by a concave mirror when an object is placed at infinity



Real, inverted, highly diminished image at focus

47. (d)



48. (c)

About some research institutes located in India:-

- **Central Electronics Engineering Research Institute, Pilani (Rajasthan)**
- **Central Food Technological Research Institute, Mysore**
- **Central Glass and Ceramic Research Institute, Kolkata**
- **Central Institute of Medicinal and Aromatic Plants, Lucknow**
- **Central Mining & Fuel Research Institute, Dhanbad**
- **Central Leather Research Institute, Chennai**
- **Central Mechanical Engineering Research Institute, Durgapur (West Bengal)**
- **Central Road Research Institute, New Delhi**
- **Central Scientific Instruments Organisation, Chandigarh**



- **Fourth Paradigm Institute**, Bangalore
- **Central Salt and Marine Chemicals Research Institute**, Bhavnagar (Gujarat)
- **Institute of Genomics and Integrative Biology**, Delhi
- **Institute of Himalayan Bioresource Technology**, Palampur
- **Indian Institute of Chemical Biology**, Kolkata
- **Indian Institute of Chemical Technology**, Hyderabad
- **Indian Institute of Petroleum**, Dehradun
- **Indian Institute of Integrative Medicine**, Jammu
- **Indian Toxicology Research Centre**, Lucknow
- **Institute of Microbial Technology**, Chandigarh
- **Institute of Mineral and Materials Technology**, Bhubaneswar

49. (c)

Electrical Fuse

- A piece of wire made of lead and tin alloy is used in making a fuse.
- It has a melting point lower and higher resistance than that of electrical wire.
- Due to this, if the current in a circuit increases above a particular point the fuse wire gets heated and burns out. Due to this the whole circuit is saved from burning.
- The fuse wire is connected to the main source in series.
- Usually 5 A (Ampere) fuse is used for household appliances, while a 15 A (Ampere) fuse is used for power circuits. 15A fuse wires are thicker than 5A (Ampere) fuse wires.

50. (d)

Velocity of sound in different materials

Medium	Velocity
Steel	5200 m/s
Water	1520 m/s
Air	330 m/s
Glass	4540 m/s
Silver	3650 m/s

51. (b)

- Messenger RNA (mRNA) is a type of single-stranded RNA that is involved in protein synthesis.
- mRNA is formed from a DNA template during the process of **transcription**.
- During translation, the mRNA produced in transcription is transported out of the nucleus, into the cytoplasm.
- The role of mRNA is to carry protein information from the DNA in the cell’s nucleus to the cell’s cytoplasm (watery interior), where the protein-making machinery reads the mRNA sequence and translates each three-base codon into its corresponding amino acid in the growing protein chain.
- mRNA vaccines work by introducing a piece of mRNA that matches a viral protein, usually a small piece of a protein found on the outer membrane of the virus.

52. (a)

MAGLEV BULLET TRAIN

- Also called ‘floating’ trains there is a lack of friction due to the new maglev technology which makes acceleration and deceleration faster and they are unaffected by weather conditions.



- Japan has successfully performed the first successful test of new generation L0 Series Trains (maglev bullet trains) designed to travel at speeds of 311 mph.
- These trains have the latest Magnetic levitation technology (maglev) instead of the conventional wheels. Magnetic levitation technology (maglev)
- Maglev (derived from magnetic levitation) is a method of propulsion that uses magnetic levitation to propel vehicles with magnets rather than with wheels, axles and bearings.
- With maglev, a vehicle is levitated a short distance away from a guideway using magnets to create both lift and thrust.

53. (c)

About the characteristics of gases: -

- All **substances** are made up of atoms, with **the configuration of the atom (number of protons, number of neutrons..)** determining the type of matter present (**oxygen, lead, silver, neon...**).
- **Individual atoms** can combine with other atoms to form molecules.
- Under normal conditions, matter exists **as a solid, liquid or gas.**
- **any gas** have a very large number of molecules that are only **weakly attracted to one another**, and are free to move around in space.
- **A gas has no definite shape or measurement, but it will expand to fill any container.**

Gas is:

- Indefinite shape and volume
- low density
- Highly Compressible
- Fast rate of spread
- high extensibility



54. (c)

Tuberculosis (TB):

- **Tuberculosis disease** It is a bacterial infection caused by **Mycobacterium tuberculosis.**
- It can affect **practically any part of the body.**
- It most often affects **the lungs, pleura (the lining around the lungs), lymph nodes, intestines, spine, and brain.**

Transmission:

- It is **an airborne infection**, spreading through close contact with an infected person, especially in **densely populated places with poor ventilation.**

Symptoms:

- There are various common symptoms of **pulmonary TB, such as cough with sputum and sometimes blood, chest pain, weakness, weight loss, fever and night sweats.**
- **1959**, the government established **the National TB Institute in Bengaluru** with the help of **WHO.**
- After this, **in the year 1962, National Tuberculosis Control Programme (NTP)** was prepared.
- Recognizing the shortcomings of the NTP, a revised **National Tuberculosis Control Programme** was developed **in 1963.**
- As of **2023, India's National TB Elimination Programme** is leading the effort to achieve the goal of eliminating TB by 2025, five years ahead of the Sustainable Development Goals target.
- It is noteworthy that **ending the TB epidemic by the year 2030** is one of the health goals of the United Nations Sustainable Development Goals.



- The Prime Minister addressed the ‘One World TB Summit’ in Varanasi, where he announced initiatives like ‘TB Free Panchayats’ and introduction of a three-month short course on preventive treatment towards achieving the goal of eliminating TB by the year 2025.

55. (b)

- **A sound wave**, also known as an acoustic wave, is a **type of mechanical wave that propagates through** a medium — such as air, water, or a solid — caused by the vibration of an object.
- Its **characteristic** is its ability to carry energy and information through the medium, which manifests itself in physical properties such as **frequency, amplitude, wavelength, and speed** are **basically longitudinal waves, where displacement of the medium is the cause of wave propagation is parallel to the direction of the wave**, creating regions of compression and rarefaction.
- **“sound pressure wave”** is often used in a broader sense to refer to waves within the audible range for humans, which ranges **from approximately 20 Hz to 20 kHz**.
- In contrast, **“acoustic wave”** is a term **preferred in scientific, engineering, and technical contexts**, including both audible sound and air pressure waves outside the human **hearing range**, including **infrasound (below 20 Hz)** and **ultrasound (above 20 kHz)**.
- This difference highlights **the versatile nature of sound waves, which** are not only important for **communication, music and environmental interaction**, but also play a vital role in a variety of applications such as **medical imaging, industrial diagnostics and environmental monitoring**.
- **Sound waves can travel through solids, liquids, and gases, but they cannot travel through a vacuum or space**

56. (a)

About Melting Point :-

- Pure, **crystalline solids** have a **specific melting point**, the temperature at which **the solid melts** to become a liquid.
- For **small samples of a pure substance** the transition between **solid and liquid** is so sharp that the melting point can be measured down to **0.1°C**.
- For example, the melting point of **solid oxygen** is **-218.4°C**.
- **Liquids** have a **specific temperature at which they turn into a solid**, called **their freezing point**.
- In **theory**, the **melting point of the solid** should be **the same as the freezing point** of the liquid.
- In practice, small differences can be **observed between these quantities**.
- It is difficult, if not impossible, to heat a **solid above its melting point**, because the heat entering the **solid at its melting point is used to change the solid into a liquid**.
- However, it is possible to cool **some liquids** to temperatures below their freezing point without forming a solid.
- When this is done, **the liquid** is said to be supercooled.
- **a supercooled liquid** can be formed by heating solid **sodium acetate trihydrate (NaCH₃CO₂·3H₂O)**.
- When **this solid melts**, the **sodium acetate** dissolves in the water trapped in the crystals and forms a solution.
- When **the solution cools down to room temperature**, it should become solid. But often it doesn't.
- However, if a small crystal of **sodium acetate trihydrate** is added to the liquid, the contents of the flask turn solid within a few seconds.
- For example, we can distinguish between three sugars named **glucose (MP = 150°C)**, **fructose (MP = 103-105°C)** and **sucrose (MP = 185-186°C)** by **determining the melting point of a small sample**.



- Measuring the melting point of a solid substance can also provide information about the purity of the substance.
- **Pure, crystalline solids** melt over a very narrow range of temperatures, whereas mixtures melt over a wider temperature range.
- melt at temperatures lower than **the melting points of pure solids**.
- **the temperature of solids** increases, the kinetic energy of the particles increases.
- **Due to the increase in kinetic energy the particles** start vibrating at a higher speed.
- **The energy provided by heat** overcomes the forces of attraction between the particles. The particles leave their fixed positions and move around more freely.
- **A state comes when the solid melts and turns into liquid**.
- The **lowest temperature at which a solid melts into a liquid at atmospheric pressure** is called its melting point.
- of ice is **273.15 K**.
- a solid substance indicates **the strength of the force of attraction between its particles**.
- **The stronger the force of attraction between solid particles**, the higher will be its melting point and vice versa.

Some examples of melting point:

- ice is **0 degrees Celsius**. **Melting ice means that the particles bound** in solid ice become loose and turn into liquid water.
- is **1084 degrees Celsius**.
- **The melting point of pure aluminium** is 660°C.
- **The melting point of carbon steel** ranges from 1371°C to 1593°C.
- **The melting point of stainless steel** is around 1510°C.
- **The melting point of silver** is 1550 degrees Celsius.
- **The melting point of camphor** is 175 to 177 degrees Celsius.

57. (a)

Some examples of acids are:

- (i) Hydrochloric acid (HCl) in gastric juice
- (ii) Carbonic acid (H₂CO₃) in soft drinks
- (iii) Ascorbic acid (vitamin C) in lemon and many fruits
- (iv) Citric acid in oranges and lemons
- (v) Acetic acid in vinegar
- (vi) Tannic acid in tea
- (vii) Nitric acid (HNO₃) used in laboratories
- (viii) Sulphuric acid (H₂SO₄) used in laboratories

58. (c)

Gupta period was known as the Golden period of India in cultural development. It is considered as the one of the supreme and most outstanding times.

Gupta Kings patronized the Sanskrit literature. They generously helped Sanskrit scholars and poets. Eventually Sanskrit language became the language of cultured and educated people.

It has also led to many books which have been written during this time by various scholars.



Important Books of Gupta Period - Author

- Brihat Samhita - Varahamihira
- Panchasiddhantika - Varahamihira
- Brahmasiddhanta - Brahmagupta
- Aryabhatiya - Aryabhatta
- Suryasiddhanta - Aryabhata
- Nyayaavatar - Siddhasena
- Malavikagnimitra - Kalidasa
- Abhijnana Shakuntala - Kalidasa
- Vikramaorvashiyam - Kalidasa
- Mudrarakshasa - Vishakhadatta
- Devi Chandraguptam – Vishakhadatta
- Panchatantra - Vishnu Sharma

59. (a)

Harappan Civilization, also known as Indus Valley Civilization, flourished between approximately 3300 BCE and 1300 BCE, with its mature phase from around 2600 BCE to 1900 BCE. It was primarily located in the northwest regions of South Asia, extending from what today is northeast Afghanistan to Pakistan and northwest India. One of the earliest and most advanced urban cultures of its time.

Harappan Civilization is noted for its impressive achievements in architecture, town planning, and social organization.

1. **Planned Urban Layout:** This civilization was renowned for its highly organized and planned urban layout. Cities like Harappa and Mohenjo-Daro featured a grid-like street plan with residential and commercial areas divided into distinct sectors. Major streets ran north-south and east-west, intersecting at right angles. Each city had a central citadel area where important buildings like granaries and possibly administrative or religious structures were located. The lower town contained residential areas with standardized sizes of bricks and houses equipped with advanced drainage systems, including covered drains along the major streets and within homes. This demonstrates a highly sophisticated approach to urban planning and public health.
3. **Dockyards for Foreign Trade:** The Harappans engaged in extensive trade, both overland with neighboring regions and overseas. Evidence of dockyards has been found at Lothal, a site in the modern state of Gujarat, India, suggesting that it served as an important trading port. Lothal's dock was constructed on the Sabarmati river, leading to speculation that it connected trade routes via the Arabian Sea. The Harappans traded goods such as cotton textiles, beads, and pottery, along with precious metals and stones, which were exchanged with civilizations in Mesopotamia, Egypt, and possibly further afield.
2. **Iron Tools for (Hunting and 4) Use of Horse in Transportation:** Both of these statements are incorrect in the context of the Harappan Civilization. The civilization predated the widespread use of iron in the Indian subcontinent; their tools were primarily made of stone, copper, and bronze. There is no substantial evidence to suggest that the Harappans used iron. Similarly, while the remains of many animal species have been found at Indus sites, evidence of horses is sparse and controversial. The few horse remains that have been claimed were found in layers that might be later than the peak of the Harappan culture, and the use of horses in transportation during the mature phase of the civilization is not supported by the archaeological evidence.



60. (d)

- Maximum number of human skeletons have been found from **Lekhhiya (Kanpur, Uttar Pradesh)**.
- **Bagor (Rajasthan)** and **Adamgarh (Madhya Pradesh)** - First evidence of animal husbandry in 5000 B.C.
- **Sarai Nahar Rai (Pratapgarh, Uttar Pradesh)** - Evidence of war, four human skeletons, pillar pit
- **Mahdaha (Pratapgarh, Uttar Pradesh)** - deerskin rings, bone jewellery, male and female burials
- **Damdama (Pratapgarh, Uttar Pradesh)** - three human skeletons, five couple burials
- **Chaupani Mando (Allahabad, Uttar Pradesh)** – oldest evidence of pottery

61. (d)

Post-Mauryan literature

- During this period, Sanskrit language was more prevalent in literary creation.
- Patanjali wrote 'Mahabhashya', which is a commentary on 'Ashtadhyayi', written by his predecessor grammarian Panini.
- The most famous Smriti is 'Manusmriti' which was written in the second century BC.
- Saundarananda, written by Ashwaghosha, is based on the incident of Buddha's step brother Anand getting initiated into Buddhism.
- Some parts of Ashwaghosha's plays have been found from a monastery in Central Asia.
- Rudradaman's 'Girnar Archives' is a unique example of Sanskrit poetry.
- Sanskrit has also been used in the inscription of 'Sui Vihar' of the Kushan Empire.

Post-Mauryan literature and writers

Creations - Creators

- Kama Sutra - Vatsyayana
- Mahabhashya - Patanjali
- **Soundarananda**, Buddhacharita - Asvaghosha
- Charaka Samhita - Charaka
- **Swapnavasavadatta** - Bhas
- Dramatics - Bharat Muni
- Charudatta - Bhaas
- **Milindpanho** - Nagasena
- Urubhanga – Bhaas
- **Gatha Saptashati** - Hala

62. (a)

The criteria developed by the Government of India for declaring a language as a classical language are as follows:

- High antiquity of its early texts/recorded history spanning a period of **1500-2000 years**.
- **A collection of ancient literature/texts, considered a valuable heritage by generations of speakers.**
- The literary tradition must be original and not borrowed from another speech community.
- Because classical languages and literature differ from modern ones, there may also be a discontinuity between a classical language and its later forms or branches.

Currently, six languages have 'classical' Language status:

Tamil (announced in 2004), Sanskrit (2005), Kannada (2008), Telugu (2008), Malayalam (2013), and Oriya (2014).



63. (a)**Ancient name - Current name**

- Awadh - Ayodhya (Faizabad)
- Rishipatan - Sarnath (Varanasi)
- Brahmasarini - Barsanna (Mathura)
- Pig Area - Soro (Kasganj)
- Sravasti - Sahet-Mahet (Sravasti)
- Kampilya - Kampil (Farrukhabad)
- Laxmanpur, Lakhanpur - Lucknow
- Kashi - Varanasi
- Kanyakubj Nagar, Mahodaya– Kannauj
- Prayagraj - Allahabad

64. (c)**Philosophy of Jainism**

- Jainism recognized the existence of the gods but placed them lower than the jina, and did not condemn the varna system as Buddhism did.
- According to Mahavira, a person is born in a high or lower varna as a consequence of his sins committed or virtues acquired by him in his previous birth.
- Mahavira looks for human values even in a chandala. In his opinion, by leading a pure and meritorious life, members of the lower castes can achieve liberation.
- Jainism principally aims at the attainment of freedom from worldly bonds. No ritual is necessary for such liberation. It can be obtained through the right knowledge, right faith, and right action. These three are considered to be the three jewels or triratna of Jainism.

65. (c)**Edicts of Ashoka**

- Ashoka was the first to introduce inscriptions in India.
- Ashoka's inscriptions were issued in the form of state orders.
- He was the first ruler who addressed the public through inscriptions.
- Ashoka's inscriptions can be divided into the following categories - Inscriptions: These can be divided into two categories - major inscriptions and minor inscriptions.
- Pillar inscriptions: These are divided into long pillar inscriptions and short pillar inscriptions.
- Cave inscriptions: These are inscriptions engraved in caves. Note: The number of Ashoka's major inscriptions is fourteen, which have been found from eight places (seven places in some sources)

Ashoka's inscriptions and their places of discovery

- James Prinsep, a British antiquary and colonial administrator, was the first to decipher Ashoka's inscriptions.
- These inscriptions of Ashoka are the first concrete evidence of Buddhism.
- They were placed in public places and on trade routes so that more and more people could read them.
- More than religious discourses, they talk about the moral duties of people, how to conduct life, Ashoka's desire to be a good and benevolent ruler, and Ashoka's actions in this direction.

There are total 33 inscriptions and are mainly classified into the following:

- Major inscriptions
- Minor inscriptions



- Isolated rock inscriptions
- Major pillar inscriptions
- Minor pillar inscriptions
- Major inscriptions:
- **There are 14 major inscriptions.**

Minor inscriptions:

- Short inscriptions are found on 15 rocks across the country and also in Afghanistan.
- **Ashoka uses his name in only four places:**
i.e Maski, Brahmagiri (Karnataka), Gujjara (MP), and Nettur (AP).

66. (b)

- **About the major translated books of the Mughal period:**
 - **Major Translated Books - Translated Translator/Author/(Language)**
 - Mahabharata (Razmnama) - Badayuni, Naqib Khan, Mullasheri(Persian)
 - Ramayana - Badayuni(Persian)
 - Rajatarangini - Zain-ul-Abidin (Persian)
 - Hitopadesh - Tajul Mali (Persian)
 - Panchtantra - Abul Fazal (Persian)
 - Pal-Damyanti - Abdurrahim Khankhana(Persian)

67. (d)

- If we rely on the Arthashastra of Kautilya, it would appear that the **state controlled almost all the economic activities in the realm.**
- **The state brought new land under cultivation with the aid of cultivators and shudra labourers. The virgin land that was opened for cultivation yielded handsome income to the state in the form of revenue collected from the newly settled peasants.**
- **Those who were provided with irrigation facilities by the state had to pay for them.**
- In addition, in times of emergency, peasants were compelled to raise more crops.
- Tolls were also levied on commodities brought to town for sale, and they were collected at the gate.
- Moreover, the state enjoyed a monopoly in mining, the sale of liquor, the manufacture of arms, etc. This naturally brought vast resources to the royal exchequer.

68. (b)

List I (Term)	List II (Meaning)
A. Sresthi	1. Chief merchant of Nigama
B. Sarthvaha	2. Head of the corporation of merchants (Vanijgramo)
C. Gandhika	3. All-purpose merchant
D. Vanij	4. Petty merchants

69. (c)

Alauddin Khilji is noted for his military innovations, including the strategic use of war elephants in battles to repel Mongol invasions effectively.



70. (c)**Hindustan Republican Association (1924)**

- In October 1924, a conference of all revolutionary groups was convened in Kanpur which was attended by veteran revolutionary leaders such as Sachindranath Sanyal, Yogesh Chatterjee, and Ram Prasad Bismil, as well as young revolutionaries including Bhagat Singh, Shiv Verma, Bhagwati Charan Bohra, Chandrashekhar Azad.
- In 1924, the Hindustan Republican Association (or Army) was formed in Kanpur and branches were established in provinces like Bengal, Bihar, Uttar Pradesh, Punjab, and Madras.
- The organization's main ideals were to instill a sense of futility in the Indian masses regarding non-violent policies and to overthrow colonial power through armed revolution Kakori Conspiracy (August 9, 1925)
- On August 9, 1925, revolutionaries of the Hindustan Republic Association successfully robbed a down train heading to Kakori on the Saharanpur-Lucknow line.
- This led to arrests and trials under the Kakori Conspiracy Case.
- Seventeen people received long sentences, four received life imprisonment, and Ram Prasad Bismil, Ashfaqulla Khan, Roshan Singh, and Rajendra Lahiri were hanged in Gorakhpur, Faizabad, Naini, and Gonda respectively.
- Chandrashekhar Azad escaped capture.

Hindustan Socialist Republican Association HSRA (1928)

- After the Kakori conspiracy, most leaders of the Hindustan Republican Association were arrested.
- The remaining revolutionaries under the leadership of Chandrashekhar Azad formed a new group.
- Chandrashekhar Azad established the Hindustan Socialist Republican Association (HSRA) at Feroz Shah Kotla in Delhi.
- Its aim was to establish a socialist republican state in India.
- Key leaders included Vijay Kumar Sinha, Shiv Verma, Jai Dev Kapoor, Bhagat Singh, Bhagwati Charan Bohra, and Sukhdev, among others.

Assassination of Saunders (December 17, 1928)

- The first act of HSRA was the assassination of Assistant Superintendent of Police Saunders in Lahore, accused of being responsible for the death of Lala Lajpat Rai.
- Saunders had ordered lathi charge on October 30, 1928, during an anti-Simon Commission protest in Lahore led by Lala Lajpat Rai (Punjab Kesari), who was beaten so severely that he died a few days later.
- On December 17, 1930, Bhagat Singh, Chandrashekhar Azad, and Rajguru assassinated Saunders at the Lahore police station.

71. (b)

- The Vernacular Press Act, often referred to as the "Gagging Act," was passed in 1878, but this Act specifically targeted vernacular press publications that were critical of the British government. It wasn't broadly directed towards all Indian-owned newspapers but specifically those published in the vernacular languages deemed to be inciting dissent or discontent against the British rule.
- After the 1857 rebellion, the Indian press landscape became highly polarized. English-language newspapers, often owned and run by British individuals or sympathizers, generally supported British colonial policies and the administration. Conversely, Indian-owned newspapers increasingly adopted and promoted nationalist and anti-colonial sentiments, reflecting and often catalyzing the growing discontent with British rule among the Indian populace.



- Amrit Bazar Patrika did not start as a pro-government newspaper. It was established in 1868 as a Bengali weekly which was always inclined towards nationalist causes and became a significant voice against British policies. When the Vernacular Press Act was enacted in 1878, Amrit Bazar Patrika shifted from Bengali to English to circumvent the restrictions imposed by the Act, enhancing its stance as a nationalist newspaper rather than changing its stance due to the Act.

72. (d)

List I (Anglo–Mysore Wars)	List II (year)	Ended with
A. First Anglo-Mysore War	1. 1767-1769	Treaty of Madras
B. Second Anglo-Mysore War	2. 1780-1784	Treaty of Mangalore
C. Third Anglo-Mysore War	3. 1789-1792	Treaty of Seringapatam
D. Fourth Anglo-Mysore War	4. 1799	Death of Tipu Sultan

73. (a)

- The main source of information about the early history of the Aryans is **the Rigveda**. There is a mention of the Sapta Sindhu region for **the Aryan residence, which means the region of seven rivers**.
- These rivers are- The Indus, the Sarasvati, the Shatudri (Sutlej), the Vipasa (Beas), the Parushni (Ravi), the Vitasta (Jhelum) and the Askini (Chenab).**
- According to the information obtained from Rigveda, Aryans expanded up to **Afghanistan, Punjab and Western Uttar Pradesh**.
- The area from Sutlej to Yamuna was called **‘Brahmavarta’**.
- In **Manusmriti**, the region between **the rivers Saraswati and Drishadvati** has been called **‘Brahmavarta’**.
- It is considered the centre of **Rigvedic civilization**.
- The Aryans also occupied **the Ganga and Yamuna Doab region** and its **border areas, which** was called **‘Brahmarishi Desh’**.
- Over time, the Aryans expanded throughout North India, which was called **‘Aryavarta’**.
- There is mention of **31 rivers in the Vedic Samhitas out of which 25 rivers are mentioned in the Rigveda**.
- The most important river of this period was Indus, while **the most sacred river** was considered to be Saraswati, which was also called **‘Devitama’, ‘Matetama’ and ‘Naditama’**.

In the Rigveda, the river Ganga has been mentioned once, while the river Yamuna has been mentioned **thrice**.

74. (b)

Ishwar Chandra Vidyasagar was determined to break the priestly monopoly of scriptural knowledge, and for this, he opened the Sanskrit College to break the self-imposed isolation of Sanskrit learning. Also, as an academician, he evolved a new methodology to teach Sanskrit.

He was also a crusader against child marriage and polygamy. He did much for the cause of Women’s education. As government inspector of schools, he helped organize thirty-five girls’ schools many of which he ran at his own expense. As secretary of Bethune School (established in 1849), he was one of the pioneers of higher education for women in India.



75. (b)

Simon Commission (1927–28)

- **The Government of India Act of 1919 provided that a Constitutional Commission would be appointed ten years after the passing of the Act to examine the extent to which India had progressed towards responsible government.**
- The commission should have been appointed after 10 years, but **the then Conservative government of Britain appointed the Simon Commission two years earlier (8 November 1927)** because it feared that after two years **Labour Party government** could appoint a statutory commission with pro-India members.
- The Simon Commission was appointed on 8 November 1927 by Lord Birkenhead, the Secretary of State for India.
- This was a constitutional commission.
- The Simon Commission, constituted under the chairmanship of **Sir John Simon**, had **seven members**.
- The fact that all seven members were British became the reason for protest; hence it was boycotted by calling it a **‘White Commission’**.
- **Simon Commission** was point of discussion at the Congress session held in Madras on **27 December 1927, which** was presided over by **M.A. Ansari**.
- Among the then political parties, **Liberal Federation, Indian Industrial Commercial Congress, Hindu Mahasabha, Kisan Mazdoor Party, Jinnah group** etc. boycotted the Commission.
- There was opposition to this **all over India**.
- Muslim League led by **Mohammad Shafi**, **Unionists in Punjab and the Justice Party in the south** did not oppose it
- Wherever the Commission went, the slogan **‘Simon Go Bank’** was raised and a nationwide strike was organised.
- visited India twice **between 1928-29**.
- The Commission submitted its report in **May 1930, which** was to be considered at **the Round Table Conference held in London**.

This anti-Simon movement brought the Indian **freedom struggle to a decisive phase**.

76. (b)

Quit India Movement (August 1942):

- Quit India Movement or August Revolution is **a unique example of bravery and fighting spirit of the Indian freedom struggle**, which shook the foundations of British rule.
- After the return of the Cripps Mission, Gandhi prepared a proposal which called **for the British to immediately leave India** and for non-violent non-cooperation from Indians in case of **Japanese attack**.
- Gandhiji challenged the Congress and said that if the proposal of struggle was not accepted, **“I will start a movement bigger than the Congress using the sand of the country.”** As a result, **the Congress Working Committee** called its meeting in **Wardha on July 14, 1942**.
- In this the decision of the conflict was accepted.
- The following month **the All India Congress Committee met** at Gwalia Tek (Bombay) where the **proposal** was approved.
- After the withdrawal of the British, a provisional government will be established for some time.
- Non-cooperation was supported against British rule.
- Gandhiji was declared the leader of the Quit India Movement.



Instructions by Gandhiji to different classes:

- These instructions were announced at Gwalia Tank itself – government servants should not leave their jobs.
- But, declare your loyalty to the Congress.
- Soldiers should refuse to fire on their countrymen.
- Students should leave their studies only when they can remain firm on their decision until independence is achieved.
- If a **landlord** is against the government, then the farmers should continue paying the rent decided on the basis of mutual interest.
- But, if any landlord is a government supporter then stop paying rent to him.
- King and Maharaja please accept it.
- Cooperate with the public and protect the sovereignty of your subjects. People of princely states should cooperate with the rulers only if they are against the government and all should declare themselves a part of the nation.
- On this occasion **Gandhiji** told the people, **“I give you a small mantra which you can engrave in your heart and express in every breath; this mantra is Do or Die.**

That is, either we will liberate India or we will die in the attempt and will not live to see the permanence of our slavery.”

77. (c)

Jallianwala Bagh Massacre (April 13, 1919):

- **On 9 April** two popular leaders of Punjab - **Dr. Satyapal and Dr. Saifuddin Kichloo** were arrested by the government.
- To protest against his arrest, a huge meeting was organised at **Jallianwala Bagh in Amritsar** on the day of **Baisakhi on 13 April 1919.**
- **General Dyer considered** this a violation of his orders and upon reaching the meeting place, he ordered to **fire on the unarmed public.**
- According to statistics **the death toll** was 379 but in reality many more people died.
- Gandhiji felt that **the whole country** might fall prey to violence and hence he announced **withdrawal of the movement on 18th April.**
- In protest against this **massacre, Rabindranath Tagore** returned **the title of ‘Knighthood’** given to him by the British government.
- **Dinabandhu F. Andrews** called the massacre a **‘deliberate murder’.**
- **Shankar Nair resigned** from the post of member of the Viceroy’s Executive.
- To investigate this murder, Congress appointed a committee under the chairmanship of **Madan Mohan Malaviya.**
- Other members of the committee were **Motilal Nehru, Mahatma Gandhi, C.R. Das, Tayyabji and Jayakar**
- The Congress Inquiry Committee in its report condemned **General Dyer and described his decision as an irrational and emotional step.**
- The British government **constituted the Hunter Commission to investigate this massacre in which there were three Indian members – Chimanlal Setalvad, Sultan Ahmed and Jagat Narayan.**
- Hunter Commission wrote in its report- **“In the then circumstances of Amritsar, it had become necessary to impose martial law and to open fire to control the growing crowd, but Dyer**



misunderstood his duty and used more force than was logically required, yet he honestly did what he thought was right.”

- To save the people guilty of the murder, the government had passed **the ‘Indemnity Bill’** before **the Hunter Commission report was released.**
- As punishment, Dyer was dismissed from his job.

Britain’s **House of Lords** in praise of Dyer and he was awarded the Sword of Honour and a sum of £2600.

78. (c)

Political institutions in Bengal:

Landholders Society or Zamindari Association The Landholders Society was founded in Calcutta in **1838** by Dwarkanath Tagore.

- It is noteworthy that the Landholders Society was the first political assembly that initiated organized political efforts. This organization used constitutional remedies to protect the interests of the landlords and to address their grievances.
- Prominent Indian leaders of the Landholders Society were landlords like Dwarkanath Tagore, Radhakant Dev, Prasanna Kumar Thakur etc. That is why it is also called ‘Zamindari Association’.

Bengal British India Society In **1843**, a political society named ‘Bengal British India Society’ was established under the chairmanship of George Thomson. It was a joint organization of Indians and non-governmental British.

- The main objective of this Sabha was to gather information about the real condition of Indians under British rule and to disseminate it.
- British Indian Association In October 1851 the British Indian Association was founded in Calcutta under the presidency of Radhakanta Dev.
- Its other prominent members were Devendranath Tagore, Ramgopal Ghosh, Pyari Chandra Mitra, Krishnadas Pal, etc.
- Due to the failures of the two previous major organisations (Landholders Society and Bengal British India Society), they were combined to form the ‘British Indian Association’.
- This organization worked mainly for the interests of the landowners.
- This organisation had demanded to set up a commission to investigate the Indigo Revolt.
- ‘Hindu Patriot’ was the main newspaper of this organization.

Indian League:

- The Indian League was founded in Calcutta on 25 September **1875** by Sisir Kumar Ghosh.
- Its temporary president was Shambhu Chandra Mukherjee. The main objective of this organization was to promote political education by developing the spirit of nationalism among the people.

Indian Association It was founded on 26 July **1876** by Surendranath Banerjee in collaboration with Anand Mohan Bose at Albert Hall in Calcutta.

- Surendranath Banerjee was its founder and Anand Mohan Bose was its secretary.
- Surendranath Banerjee is also known as ‘Rashtra Guru’.
- The Indian Association was established in place of the Indian League. Its objective was to include the middle class as well as the common class in it, therefore its subscription was kept at five rupees per annum.
- In this association, priority was given to the middle class instead of the landlords.
- This organisation launched the Civil Services Movement, also known as the ‘Bharatiya Janpad Seva Andolan’ (Civil Services Movement).



- Apart from this, a movement was launched against the Vernacular Press Act, Arms Act and Ilbert Bill.
- In 1883, Surendranath Banerjee was sentenced to two months' imprisonment for criticising Calcutta High Court judge J.F. Norris in his newspaper 'Bengali'.
- The Indian Association organised the first Indian National Conference in December 1883 at Albert Hall, Calcutta under the presidency of Ananda Mohan Bose.
- The second Indian National Conference was held in Calcutta in December 1885.
- It was chaired by Surendranath Banerjee.
- In 1886 it merged with the Indian National Congress.

79. (a)

Kuka Revolt:

This movement was founded in 1840 by Bhagat Jawahar Mal (also called Sian Saheb) in western Punjab. When the British took the Punjab, the movement transformed from a religious purification campaign to a political one.

Its basic tenets were the abolition of caste and similar discriminations among Sikhs.

80. (b)

- The Ilbert Bill Controversy During the period of Lord Ripon as Viceroy, the Ilbert Bill was passed.
- It empowered the Indian judges to try the Europeans.
- It created hue and cry among the Europeans and their pressure led to reform the bill inserting a clause whereby a jury of 50% Europeans was required if an Indian judge was to face a European on the dock.
- Finally, a solution was adopted by way of compromise: jurisdiction to try Europeans would be conferred on European and Indian District Magistrates and Sessions Judges alike. However, a defendant would in all cases have the right to claim trial by a jury of which at least half the members must be European.

81. (b)

About Gandhiji's arrival in India:

- In **January 1915**, Gandhiji returned to India from South Africa.
- Here he was most influenced by the thoughts of **Gopal Krishna Gokhale** and later Gandhiji accepted **Gokhale as his political guru**.
- When Gandhiji came to India, **the First World War** was going on.
- Gandhi supported the British and encouraged **Indians** to join the army, for which some people called him '**Army Recruitment Sergeant**'.
- Due to his support to the British in **the First World War**, **the British government** awarded the title of '**Kaiser-e-Hind**' to **Gandhiji in 1915**.
- On coming to India, Gandhiji established '**Satyagraha Ashram/Sabarmati Ashram**' on the banks of **Sabarmati river**.
- Its objective was to encourage **creative work**.
- Gandhi emerged as an influential leader in Indian politics after successfully leading **the Champaran Movement of North Bihar**, the labour dispute movement of Ahmedabad and **the Kheda peasant movement of Gujarat**.



82. (b)**Amendments Proposed by Jinnah :**

At the All Parties Conference held at Calcutta in December 1928 to consider the Nehru Report, Jinnah, on behalf of the Muslim League, proposed three amendments to the report:

1. One-third representation to Muslims in the Central Legislature
2. Reservation to Muslims in Bengal and Punjab legislatures proportionate to their population, till adult suffrage was established
3. Residual powers to provinces.

These demands not being accommodated, Jinnah went back to the Shafi faction of the Muslim League and in March 1929 gave fourteen points which were to become the basis of all future propaganda of the Muslim League.

83. (a)**Major Waterfalls of India — River:**

- **Kyenrem Falls** — Cherrapunji, (in East Khasi Hills district of Meghalaya state)
- **Meenmutty Falls** – Wayanad, Kerala
- **Chitrakoot Falls** – On Indravati River (Chhattisgarh), called the Niagara of India.
- **Hundru Falls** – On the river Swarnarekha, Ranchi (Jharkhand)
- **Kapildhara Falls** – Amarkantak District (MP) – Narmada River
- **Dhuandhar Falls** – Bhedaghat Jabalpur (MP) – Narmada River
- **Pykara Falls** — Nilgiri Hills
- **Kakolat Falls** – Nawada (Bihar)
- **Kyenrem Falls** — Cherrapunji area Meghalaya (East Khasi Hills Hill District)
- **Chulia Falls** – Kota (Rajasthan) Chambal River.
- **Mandhar and Punasa** — Madhya Pradesh – Narmada River
- **Chachai Falls** — on the Chambal River in Madhya Pradesh

84. (c)

The four nearest planets to the Sun, Mercury, Venus, Earth and Mars, are called terrestrial planets because their structure is similar to Earth.

The common features of the terrestrial planets are:

1. They have a **thin, rocky crust**.
2. They have a mantle rich in iron and magnesium.
3. They have a **core of heavy metals**.
4. They have a **thin atmosphere**.
5. They have very few natural satellites (or moons) or no satellites.

They have varied terrain such as volcanoes, canyons, mountains, and craters.

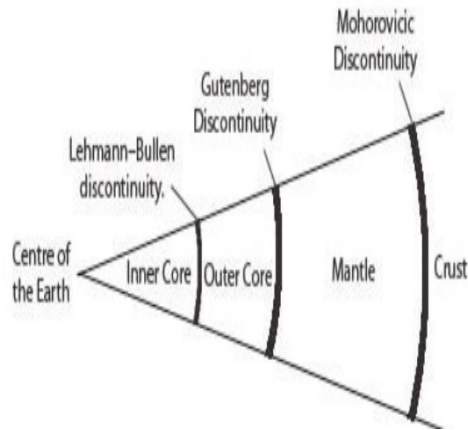
The planets that are outside the orbit of Mars are called Jovian planets because their structure is similar to that of Jupiter. The Jovian planets are Jupiter, Saturn, Uranus, and Neptune.

The common features of the Jovian planets are:

1. They are all gaseous bodies (made of gases)
2. They have a ring system around them.
3. They have a large number of natural satellites (or moons).



85. (a)



86. (c)

Major Cities of the World - Related Industries:

- Detroit (USA) - Automobiles
- Chicago (USA) - Meat processing
- Los Angeles (USA) - aircraft and films
- San Francisco (USA) - oil refining, computers and ships
- Houston (USA) - Oil and Natural Gas
- Paris (France) - Transport and aircraft
- Amsterdam (Netherlands) - shipbuilding
- Moscow (Russia) - metallurgy, chemical and machinery industries
- Chelyabinsk (Russia) - metallurgy and military machinery industry

87. (b)

Local names of shifting cultivation - regions

- Deepa - Chhattisgarh (Bastar Division)
- **Jara and Erica** - South India
- **Kumari** - Western Ghats
- Kaman, Vringa, Pommdarbi - Odisha
- **Khil** - Himachal Pradesh
- **Balra** - Rajasthan
- Veera, Masan, Bewar, Dahia - Madhya Pradesh
- Jhoom - North Eastern Ghats

88. (a)

Information related to minerals found in India: -

- **Bellari** located in **Karnataka** is famous for the excavation of iron ore.
- **manganese and copper** is excavated in **Chitradurga mine**
- **Bhilwara (Rajasthan)** is famous for copper mining.
- **In Rajasthan**, deposits of manganese ore are found in districts like **Banswara, Udaipur, Pali etc.**
- **Katni in Madhya Pradesh** is known for the quarrying of bauxite.
- **Hutti Gold Mines:** This mine in the Raichur district of Karnataka is one of the most important gold mines in India.



Some more mineral mining town:

- Diamond - Madhya Pradesh (Majgawan Mine, Panna District)
- Uranium - Jharkhand (Ranchi, Hazaribagh, Singhbhum)
- Thorium Pyrites - Rajasthan (Pali, Bhilwara)
- Tungsten - Rajasthan, Tamil Nadu, Karnataka
- Chromite - Jharkhand and Odisha
- Lead - Jharkhand, Rajasthan.
- Lignite - Tamil Nadu, Rajasthan
- Tin - Chattisgarh

89. (b)

Recently shipments of Tur/Pigeon peas from Nacala Port in Mozambique, disrupted by an “anti-India” group, have resumed after the Ministry of Consumer Affairs raised the issue with the Ministry of External Affairs.

About Mozambique country:

- It is a **country in Southern Africa** and is located in **the Southern Hemisphere of the Earth**.
- The country also has a coastline with **Indian Ocean to the east**.
- The island countries and territories of **Madagascar, Comoros, and Mayotte** are separated from **Mozambique by the Mozambique Channel**.
- **bordering countries: Zimbabwe, Eswatini, South Africa, Zambia, Malawi and Tanzania.**
- **Rivers:** It is drained by several important rivers, of which **the Zambezi is the largest and other rivers** are Limpopo, Likungo, Lurio, Rovuma, etc.
- Major Lakes: **Lake Malawi (Nyasa)** is the country’s major lake.
- **Highest peak: Mount Binga**
- **Capital:** Maputo is the capital of the country while the largest city is Matola.

90. (a)

- **Hoover Dam** is located on the **Colorado River**.
- **Three Gorges Dam** is built on the **Yangtze River**.
- **Aswan High Dam** is situated on the **Nile River**.
- **Bhakra Dam** is built on the **Sutlej River**.

91. (b)

- **Explanation:**
- **Kharia** is indeed predominantly found in **Odisha**.
- **Paliyan** is correctly associated with **Tamil Nadu**.
- Garasia people are mainly found in Southern Rajasthan in India, not Uttar Pradesh,
- Yanadi are primarily from Andhra Pradesh, not Rajasthan

92. (a)

- Krishna is the second largest east-flowing Peninsular river which rises from a spring near Mahabaleshwar.
- The Godavari is the largest Peninsular river.
- Its total length is 1,401 km.
- The Koyna, the Tungbhadra and the Bhima are its major tributaries
- Its drainage basin is shared by Maharashtra, Karnataka and Andhra Pradesh.



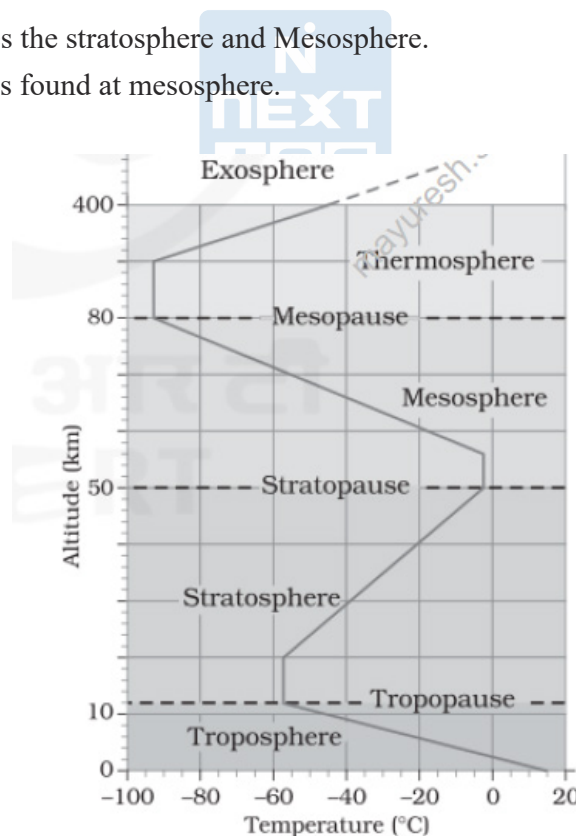
93. (b)

- India’s deepest port is Krishnapatnam Port. It is most liable for controlling 75 million tonnes of cargo per year. Krishnapatnam Port is known as the deepest port in India and it’s made up of a draft of 18.5 meters.
- The latest major port in India is the Vadhavan Port in Maharashtra, which was approved by the Union Cabinet in June 2024:
- Location: Vadhavan Port is located near the Gujarat border
- Cost: The port will cost Rs 76,220 crore
- Capacity: The port will have a capacity of 298 million metric tons per year
- Cargo handling: The port will handle 23.2 million TEUs of cargo by 2040
- Significance: The port will help elevate India’s marine sector to be among the top 10 countries in the world
- Development: The port will be developed on the “Landlord Model”

94. (b)

When we move from the earth’s surface to the exosphere we observe that:

1. Temperature first decreases till tropopause and the star increases till stratopause and then again starts decreasing till mesopause and then again starts increasing after that which can be illustrated through the given image.
2. Startopause separates the stratosphere and Mesosphere.
3. lowest temperature is found at mesosphere.



95. (a)

Guinea, Senegal and The Gambia are the basin countries of the “Gambia River”. The Gambia River is a major river in West Africa, running 1,120 kilometres from the Fouta Djallon plateau in north Guinea westward through Senegal and The Gambia to the Atlantic Ocean at the city of Banjul. It is navigable for about half that length. The river is strongly associated with The Gambia, the smallest country in mainland Africa, which consists of little more than the downstream half of the river and its two banks.

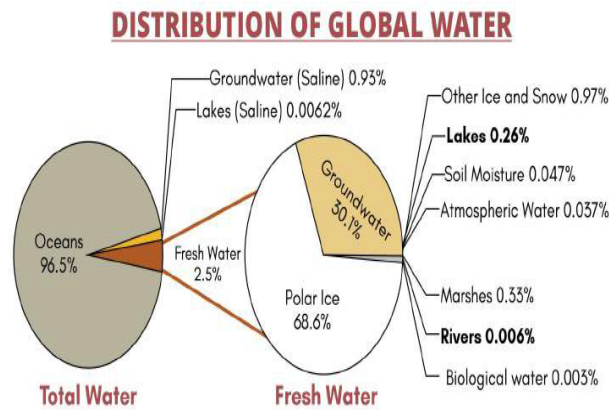


96. (a)

Temperature inversion takes place under certain specific conditions.

- **Long winter nights:** if in winters the sky is clear during long nights, the terrestrial radiation is accelerated. The reason is that the land surface gets cooled quickly. The bottom layer of the atmosphere in contact with the ground is also cooled and the upper layer remains relatively warm.
- **Cloudless clear sky:** The clouds obstruct the terrestrial radiation. But this radiation does not face any obstacles for being reflected into space when the sky is clear. Therefore the ground is cooled quickly and so is the air in contact with it cooled.
- **Dry air:** humid air absorbs the terrestrial radiation but dry air is no obstruction to terrestrial radiation and allows the radiation to escape into space.
- **Calm atmosphere:** the blowing of winds brings warm and cold air into contact. Under conditions of a calm atmosphere, the cold air stays put near the ground.
- **Ice-covered surface:** in ice-covered areas due to high albedo less insolation is received. At night due to terrestrial radiation, most of the heat is lost to the atmosphere and the surface is cooled. The air in contact with it is also cooled but the upper layer remains warm.

97. (a)



98. (d)

- Gross National Product can be achieved by adding “Net Factor Income from Abroad” to Gross Domestic Product.
- Real domestic product means GDP at constant prices.

99. (a)

PM Modi had inaugurated Uttar Pradesh Global Investor Summit in Lucknow. It was a three-day-long summit.

More than 18,605 Memorandum of Understanding were signed during the summit

The state received Rs 33.5 lakh crores of investment

Invest UP 2.0 was launched during the summit

These investments are to create 92.5 lakh employees in the state

100. (b)

On 5th February, 2024 **Uttar Pradesh finance minister** Suresh Kumar Khanna presented **the budget for the financial year 2024-2025** in the state assembly.

- The **total expenditure** is estimated at **Rs 7,36,437.71 crore**.
- Out of the total expenditure, **Rs 5,32,655.33 crore** has been **allocated for the revenue account and Rs 2,03,782.38 crore for capital account**.



- After deducting the total expenditure from the receipts of the consolidated fund, a **deficit of Rs 15,103.89 crore is estimated** in the budget.
- There has also been increase in the amount payable to eligible beneficiaries under the Destitute Women Pension Scheme from Rs 500 per month to Rs 1,000 per month

101. (d)

A Non-Banking Financial Company (NBFC) is a company registered under the Companies Act, 1956 engaged in the business of loans and advances, acquisition of shares/ stocks/ bonds/ debentures/securities issued by Government or local authority or other marketable securities of a like nature, but does not include any institution whose principal business is that of agriculture activity, industrial activity, purchase or sale of any goods (other than securities) or providing any services and sale/purchase/construction of the immovable property.

NBFCs lend and make investments and hence their activities are akin to that of banks; however, there are a few differences as given below:

- NBFC cannot accept demand deposits;
- NBFCs do not form part of the payment and settlement system and cannot issue cheques drawn on itself
- The deposit insurance facility of Deposit Insurance and Credit Guarantee Corporation is not available to depositors of NBFCs, unlike in the case of banks.

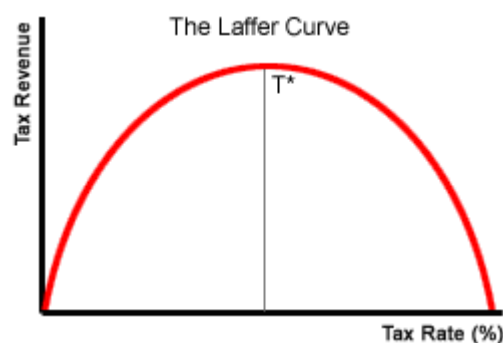
No NBFC can commence or carry on the business of a non-banking financial institution without obtaining a certificate of registration from the Reserve Bank of India and without having Net Owned Funds of Rs. 25 lakhs.

NBFCs can be classified into two broad categories, viz., (i) NBFCs accepting public deposit (NBFCs-D) and (ii) NBFCs not accepting/holding public deposit (NBFCs-ND). Residuary Non-Banking Companies (RNBCs) are another category of NBFCs whose principal business is The acceptance of deposits and investing in approved securities.

102. (c)

The Laffer Curve shows the relationship between tax rates and tax revenue. This graph shows that as the tax rate increases from zero, the amount of tax revenue collected will increase.

At point T*, however, increases in the tax rate lead to decreases in the tax revenue collected. Governments would like to be at this point because it is the point at which the government collects the maximum amount of tax revenue while people continue to work hard. This would theoretically be the point at which potential GDP is maximized.

**103. (d)**

Uttar Pradesh is literally, a treasure house, with each and every district having unique music traditions. This state is considered as the citadel of 'Purbaiya Ang' of Hindustani Classic Music.



The history of Uttar Pradesh's folk music is as old as its civilization, with roots deeply embedded in ancient traditions. The region's music has evolved over millennia, influenced by its varied demographic and cultural exchanges, including the Vedic age, the Mughal era, and British colonial rule. The confluence of Hindu and Islamic traditions has enriched its musical heritage, creating a unique blend that resonates with the spiritual, emotional, and social fabric of its people.

Major folk songs of Uttar Pradesh and related areas:

- Ijuri Faag - Bundelkhand
- Kajri - Mirzapur, Varanasi
- Birha - Purvanchal
- Alha – Bundelkhand
- Chaiti- Awadh, Bhojpur region
- Hori, Faag, Rasiya - Braj region
- Sohar - Awadh (Purvanchal)

104. (c)

Mahajapadas located partially or fully in UP were:

- Koshala
- Vatsa
- Malla
- Kuru
- Panchala
- Chedi
- Surasena
- Kashi



105. (d)

- In 1194 Sultan Muhammad Ghori captured Koil (modern Aligarh) from the Dor Rajputs.
- The Battle of Chandawar (modern Chandawal near Firozabad) was fought in 1194 between Muhammad Ghori and Jayachandra of the Gahadavala dynasty. Jayachandra was defeated and killed by Muhammad Ghori.
- Muhammad Ghori captured Gahadavala's capital, Kannauj in 1198.

106. (a)

- Sonbhadra is the only district in Uttar Pradesh that touch 4 states - Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh whereas Saharanpur district of Uttar Pradesh borders three states: Haryana, Himachal Pradesh, and Uttarakhand.
- Lalitpur is a district in Uttar Pradesh that touches the lowest districts.
- Lalitpur is a district that is surrounded by Madhya Pradesh on three sides. It is bordered with Tikamgarh in the east, Sagar in the south and Ashoknagar and Shivpuri to the west of it.
- Hardoi is such a district in Uttar Pradesh that touches the most districts.
- The longest of the states bordering Uttar Pradesh - the longest border state - Madhya Pradesh

The smallest border state - Himachal Pradesh

107. (c)

Dam is a barrier that stops the flow of water and results in the creation of a reservoir. Dams are mainly built in order to produce electricity by using water. This form of electricity is known as hydroelectricity.



Reservoirs created by dams not only suppress floods but also provide water for activities such as irrigation, human consumption, industrial use, aquaculture, and navigability.

Major dams in UP along with river on which they are located.

- Moosakhand Dam - Karmnasha River (Chandauli)
- Maudaha Dam - Birma River (Hamirpur)
- Arjun Dam - Arjun River (Mahoba)
- Rajghat Project - Betwa River (Joint Project of U.P. and Madhya Pradesh) Lalitpur
- Obra Dam-Rihand river in (Sonbhadra)
- Kanhar Dam - Kanhar River (Sonbhadra)
- Sharda Hydroelectric Project - Lakhimpur Banavasa (on Nepal border) Sharda Canal,
- Sharda Canal U.P. Is the largest canal.

108. (c)

Sessions of the Indian National Congress (9) held in Uttar Pradesh from 1885-1947

Annual Sessions	Place	President	Special Facts
1888	Allahabad	George Yule	First English President of the Indian National Congress
1892	Allahabad	Womesh Chandra Bonnerjee	Congress criticised the Indian Councils Act of 1892.
1899	Lucknow	Ramesh Chandra Dutt	
1905	Varanasi	Gopal Krishna Gokhale	The division between the ‘moderates’ and the ‘extremists’.
1910	Allahabad	William Wedderburn	
1916	Lucknow	Ambika Charan Mazumdar	Unification of the moderates and extremists within the Congress but also the closing of ranks between the Congress and the All India Muslim League. The League also held its session in the same city; Lucknow, that year.
1925	Kanpur	Sarojini Naidu	Sarojini Naidu became the second woman (1st Indian Woman) to preside over the Congress after Annie Besant.
1936	Lucknow	Pandit Jawaharlal Nehru	
1946	Meerut	J.B Kripalani	

109. (a)

The correct order of the largest (area-wise) districts of UP is :

Lakhimpur Kheri - 7,680 km²

Sonbhadra - 6,788 km²

Hardoi - 5,986 km²



Sitapur - 5,743 km²

Bahraich - 5,745 km²

110. (b)

Major Park/District of Uttar Pradesh - located

- Biotechnology Park - Lucknow
- Wave City - Ghaziabad
- Perfume Park - Kannauj
- Toy City - Greater Noida
- Leather Park - Agra
- Leather Technology Park - Banthar Unnao
- Science Park - Sandila (Hardoi)
- Electronic City - Noida
- Theme Park (Tourism) - Agra Buddha Theme Park
- Sarnath (Varanasi)

111. (b)

Uttar Pradesh government is planning to invest Rs 5 trillion in the newly created State Capital Region (SCR) that will position Lucknow as a major investment hub in North India.

SCR spans across 27,826 sq km and encompasses six districts — Lucknow, Hardoi, Sitapur, Unnao, Rae Bareilly, and Barabanki.

To achieve the goal, the state has mandated the UP State Industrial Development Authority (UPSIDA) and the UP Expressway Industrial Development Authority (UPEIDA) to acquire land. The UP State Capital Region Development Authority (UP-SCRDA) has been given the charge to manage Lucknow-SCR. The acquired land would be allotted to investors for setting up of industries, housing, and infrastructure projects.

112. (c)

About Katarniaghat Wildlife Sanctuary(KWS) :

- It is a **protected area in the Upper Gangetic Plain** in Uttar Pradesh and covers an area of 400.6 km² in the Terai of **Bahraich district**.
- In **1987**, it was brought under the ambit of **‘Project Tiger’ and together with Kishanpur Wildlife Sanctuary and Dudhwa National Park** it forms the Dudhwa Tiger Reserve.
- It provides strategic connectivity between **the tiger habitats of Dudhwa and Kishanpur in India and Bardia National Park in Nepal**.
- Its **delicate Terai ecosystem** includes sal and teak forests, lush grasslands, **numerous swamps and wetlands**.
- It is dominantly Sal forest, with its associate tree species like **Terminalia alta (Asna), Lagerstroemia parviflora (Asidha), Adina cordifolia (Haldu)**, Mitragyna. It provides strategic connectivity between **the tiger habitats of Dudhwa and Kishanpur in India and Bardia National Park in Nepal**.
- Its **delicate Terai ecosystem** includes sal and teak forests, lush grasslands, **numerous swamps and wetlands**.

It is dominantly Sal forest with its associate tree species like **Terminalia alta (Asna), Lagerstroemia parviflora (Asidha), Adina cordifolia (Haldu)**, Mitragyna.



113. (b)

Recently, Uttar Pradesh has established the world's first conservation and breeding centre for Asian king vultures in the Maharajganj district.

114. (d)

Pran Pratistha ceremony of Ram Mandir was held on 22 January 2024. Layout of Ayodhya Ram Mandir:

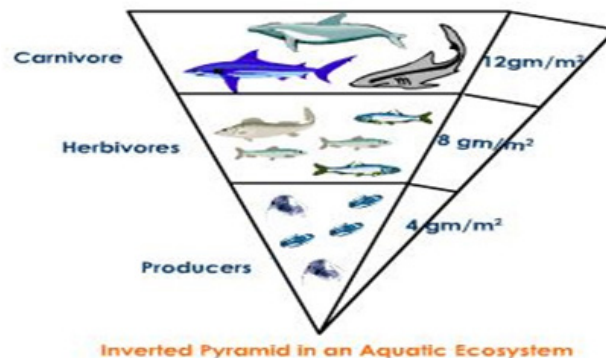
- The Temple is built over three 20-foot-high floors each with a total of 392 pillars and 44 doors.
- Makrana Marble and Pink sandstone, granite stone, and coloured Marble are used in the construction.
- The foundation of the temple is built of a 4-metre-thick layer of roller-compacted concrete. And a 21-foot-high granite plinth has been placed to protect against ground moisture.
- Iron has not been used anywhere in the construction.
- The Architectural style of the temple is Nagara style with Sanctum Sanctorum (garbhagriha), Mandaps (halls), and Mandirs.
- At each corner of the compound will be dedicated to Surya, Bhagwati, Ganesh, Shiv.
- **the significance of the black stone (Shaligrama Shila) used in the Ram Mandir's foundation is that it is the symbol of lord Vishnu.**

115. (a)

- The important point to note is that the amount of energy decreases at successive trophic levels.
- The number of trophic levels in the grazing food chain is restricted as the transfer of energy follows the 10 per cent law – only 10 per cent of the energy is transferred to each trophic level from the lower trophic level.

116. (d)

- Pyramid of biomass can be upright (e.g. in the grassland ecosystem) or inverted. Inverted pyramids can occur in aquatic ecosystems. This happens because in aquatic ecosystems producers are tiny phytoplankton. Thus, consumer biomass exceeds producer biomass.



117. (b)

About Rotterdam Convention:-

- This is legally binding international treaty.
- It was adopted at the Conference of Plenipotentiaries, in Rotterdam in 1998.
- The treaty was implemented in 2004.
- India is a signatory nation to this treaty.
- Reportedly: It aims at implementing the Prior Informed Consent (PIC) procedure for Certain Hazardous Chemicals and Pesticides in International Trade

It includes pesticides and industrial chemicals, whose use has been restricted or strictly limited by the parties for health or environmental reasons.



118. (d)

Ecosystem Services		
PROVISIONING SERVICES	REGULATING SERVICES	CULTURAL SERVICES
The "products" obtained from ecosystems	Benefits obtained from the regulation of ecosystem processes	Nonmaterial benefits obtained from ecosystems
Foods Fibers Ornamentals Medicines Biofuels Fresh water Genetic resources	Climate regulation Flood prevention Erosion control Pest control Pollination Seed dispersal Disease regulation	Educational Recreational Sense of place Spiritual Cognitive development Stress relief Gardening
SUPPORTING SERVICES		
Services necessary for the production of all other ecosystem services		
Biodiversity Nutrient recycling Primary productivity		

119. (d)

Major Year - Related

- Year 2013 - International Water Year
- Year 2011 - International Year of Forests
- Year 2002 - International Year of Mountains
- Year 2006 - International Year of Deserts
- Year 2010 - International Year of Biodiversity

The years from 2011 to 2020 were celebrated as the International Decade of Biodiversity by the United Nations.

120. (b)

The NGT has the power to hear all civil cases relating to environmental issues and questions that are linked to the implementation of laws listed in Schedule I of the NGT Act. These include the following:

- (a) The Water (Prevention and Control of Pollution) Act, 1974;
 - (b) The Water (Prevention and Control of Pollution) Cess Act, 1977;
 - (c) The Forest (Conservation) Act, 1980;
 - (d) The Air (Prevention and Control of Pollution) Act, 1981;
 - (e) The Environment (Protection) Act, 1986;
 - (f) The Public Liability Insurance Act, 1991;
 - (g) The Biological Diversity Act, 2002.
- This means that any violations pertaining only to these laws, or any order/decision taken by the Government under these laws can be challenged before the NGT. Importantly, the
 - NGT has not been vested with powers to hear any matter relating to the Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927 and various laws enacted by States relating to forests, tree preservation etc.

121. (c)

India National Research Centre

- **National Banana Research Centre**, Trichy (Tamil Nadu)
- **National Research Centre for Grapes**, Pune



- **National Research Center for Litchi**, Muzaffarpur (Bihar)
- **National Research Centre on Pomegranate**, Solapur (Maharashtra)
- **National Research Centre on Camel**, Bikaner
- **National Research Centre on Horses**, Hisar (Haryana)
- **National Research Centre on Meat**, Hyderabad
- **National Research Centre for Mithun**, Medziphema, Nagaland
- **National Research Centre for Orchid**, Pekyang, Sikkim
- **National Research Centre on Pigs**, Guwahati
- **National Seed Spices Research Centre**, Ajmer
- **National Research Centre on Yak**, West Kameng (Arunachal Pradesh)
- **National Research Centre for Integrated Pest Management**, New Delhi
- **Mahatma Gandhi Integrated Agricultural Research Institute**, Motihari (Bihar)

122. (c)

World Population Day is celebrated annually on 11 July to focus attention on the urgency and importance of population issues.

In 1989, the then-Governing Council of the UN Development Programme (UNDP) established the Day as an outgrowth of the interest generated by the Day of Five Billion, which was observed on 11 July 1987. By resolution 45/216 of December 1990, the UN General Assembly (UNGA) decided to continue observing World Population Day to enhance awareness of population issues, including their relations to the environment and development.

The theme for World Population Day 2024 is “Leave No One Behind, Count Everyone”. This theme highlights the importance of ensuring that everyone is fairly represented in population census data, regardless of their background, nationality, geography, or socioeconomic status

123. (d)

Lisa Nandy won with a big margin in Wigan. She worked as Shadow Cabinet Minister for International Development and was **elected in the Parliament four times between 2010-2024**.

Nandy took her first degree at Newcastle University and then pursued **an MSc in Politics and Government** from University of Birkbeck.

She worked as a Senior Policy Adviser at The Children’s Society from 2005 to 2010 and served as a Labour councillor in Hammersmith and Fulham London Borough Council from 2006 to 2010.

New UK PM Keir Starmer has appointed Indian-origin Lisa Nandy culture secretary in his Cabinet.

124. (c)

- **At least 121 people, almost all women, were killed on Tuesday on 2nd of July 2024 in a stampede during a religious gathering in Uttar Pradesh’s Hathras district.**
- A three-member judicial inquiry commission will be constituted by the Uttar Pradesh government on July 3, 2024 to investigate the Hathras accident.
- The committee is chaired by Former Allahabad High Court Judge Justice Brijesh Kumar Srivastava.
- Other members of the commission include - former IAS officer Hemant Rao and former IPS officer Bhavesh Kumar Singh
- This commission will submit its report to the government within 2 months. It is worth noting that about 121 people died in the Hathras accident.



125. (d)**World Digital Competitiveness Ranking, 2023**

- The International Institute for Management Development (IMD) has published the World Digital Competitiveness Ranking (WDCR)-2023 on December 1, 2023, in which India is ranked 49th among 64 economies.
- According to the IMD study, India has made significant progress in terms of cybersecurity knowledge, but it lacks on fronts such as technology and future preparedness.
- IMD's World Digital Competitiveness Ranking gives an insight into how different countries are approaching digital transformation in the age of artificial intelligence (AI).
- The US is the top ranked country in this year's ranking, followed by the Netherlands and Singapore.
- The United States is at the top position with strong results in all three factors: knowledge, technology and future preparedness.
- The top ranked economy in the knowledge factor is Switzerland at the 5th position.
- In the Asia-Pacific region, India has slipped to the 12th position among 14 countries after being ranked 11th for 4 consecutive years.

Compared to the year 2022, India has slipped two places to 18th position among 27 countries with a population of more than 20 crores.

126. (b)

Dhruv Sitwala defeated **Pankaj Advani** to win the 2024 Asian Billiards Championship in Riyadh, Saudi Arabia. The Asian Championship was organised by the Asian Confederation of Billiard Sports (ACBS) in **Riyadh, Saudi Arabia**, from 27th June to 5th July 2024.

The Asian Championship included the Men's Snooker Team Championship, Men's Billiards Championship and Women's Asian Snooker Championship events.

127. (a)

Dr. Purnima Devi Barman, a wildlife biologist from Assam, won the 2024 Whitley Gold Award, also known as the Green Oscar, for her conservation efforts to protect the endangered Greater Adjutant Stork and its wetland habitat.

128. (a)

- India's hosting of the [World Heritage Committee](#) Meeting, from July 21 to 31, 2024, at Bharat Mandapam in New Delhi, involved discussions on new site nominations, conservation reports, international assistance, and the utilization of World Heritage Funds.
- Over 2000 delegates from more than 150 countries participated, alongside the World Heritage Young Professionals' Forum and World Heritage Site Managers' Forum.
- This marks the first time India has hosted this prestigious event, which is crucial for managing and inscribing sites on the World Heritage list.
- Cherai Madam from Assam was added as the latest site (43rd) from India.

129. (d)

International Tiger Day 2024, also called as the Global Tiger Day 2024, is observed every year on **July 29** to raise awareness about the magnificent but endangered animal. The day is a reminder of the collective effort of 13 tiger range countries which came together to create TX2- the global goal to double the wild tigers' population in 2022.

The theme for International Tiger Day 2024 is "**Call for Action**". This theme highlights the need for a coordinated global effort to save the endangered tiger species



130. (d)

Responding to forest fires in Uttarakhand's Pauri Garhwal sector, the IAF deployed Mi17 V5 helicopters for Bambi Bucket operations. This specialized firefighting technique involves suspending a container beneath a helicopter, filling it from a water source, and then releasing it over the fire zone. Bambi Buckets are vital for tackling wildfires in inaccessible areas. Globally, helicopters are often utilized in such firefighting efforts due to their versatility and effectiveness.

131. (b)

Recently, China and the Philippines have struck a deal to defuse tensions on a contested Second Thomas shoal in the South China Sea.

About Second Thomas shoal:

- It is a submerged reef (locally known as **Ayungin**) located in the **Spratly Islands**, South China Sea.
- The Philippines first took possession of the feature in **1999**. The Philippine outpost on Second Thomas Shoal is the BRP Sierra Madre.

132. (b)

Bishnoi Movement, which originated in the 15th century in Rajasthan, was founded by Guru Jambheshwar, also known as Jambhuji. He established the Bishnoi sect with a strong emphasis on environmental conservation as a core tenet of their beliefs.

Appiko Movement, focused on forest conservation, was started in Karnataka in 1983 by environmentalist Pandurang Hegde, inspired by the Chipko Movement in Uttarakhand. Baba Amte, however, was renowned for his work with leprosy patients and social activism but was not directly associated with the Appiko Movement.

Maiti Movement, initiated by Kalyan Singh Rawat, is an environmental initiative in Uttarakhand, India, where local communities, particularly women, plant trees while singing traditional songs during weddings and other celebrations, emphasizing environmental stewardship.

Narmada Bachao Andolan (NBA) is a social movement consisting of adivasis, farmers, environmentalists, and human rights activists against the construction of large dams on the Narmada River. Although Sunderlal Bahuguna was a prominent environmental activist known for the Chipko Movement, the Narmada Bachao Andolan was led primarily by Medha Patkar and others.

133. (b)

Only 1, 2, and 3.

The Darjeeling Himalayan Railway, Nilgiri Mountain Railway, and Kalka-Shimla Railway are part of the Mountain Railways of India, which are recognized as UNESCO World Heritage Sites. Matheran Hill Railway is not included in this list.

134. (b)

The Indian Army and Punit Balan Group joined hands to inaugurate Pune's inaugural Constitution Park in Pune.

Lt. Gen. Ajai Kumar Singh led the ceremony, stressing citizens' constitutional duties for India's progress by 2047.

He highlighted the global importance of the Indian Constitution, which secures Fundamental Rights and underscores Fundamental Duties. Understanding these rights and responsibilities is pivotal for India's development.

135. (a)

Uttarakhand government suspended Patanjali Ayurved's manufacturing licenses for 14 products over misleading ads. The company faces scrutiny for non-compliance with advertising regulations. The move,



issued on April 24 by the state's drug regulator, cites Patanjali's persistent dissemination of deceptive efficacy claims. This action reflects the government's commitment to enforce truthful advertising standards and holds implications for Ramdev's legal battles.

136. (b)

National Green Hydrogen Mission:

- The Mission will “facilitate demand creation, production, utilisation and export of Green Hydrogen,”
- It aims to make India a ‘global hub’ for using, producing and exporting green hydrogen.
- It aims to incentivise the commercial production of green hydrogen and make India a net exporter of the fuel.
- The mission has laid out a target to develop green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum.
 - This is alongside adding renewable energy capacity of about 125 GW (gigawatt) in the country.

137. (a)

Scientists in Germany have discovered plastic-eating fungi from the *Aspergillus* and *Pestalotiopsis* genera that may help address plastic waste. These fungi can break down plastics, potentially offering a solution to plastic pollution. Challenges include CO₂ release and the need for specific environmental conditions to optimize the process. This discovery could significantly help in reducing plastic pollution in the world's oceans.

138. (d)

Department of Pension & Pensioners' Welfare (DOPPW) introduced a centralized pension processing software called 'Bhavishya' for all central government Ministries/Departments.

'Bhavishya' is an online Pension Sanction & Payment Tracking System to address delays, clerical errors, and financial loss in pension processing.

The software starts the pension process 15 months before retirement and uses a single form for the pensioner.

It also integrates with the Public Financial Management System (PFMS) for seamless electronic pension payments.

139. (a)

Women's Asian Champions Trophy hockey tournament in 2024 will be held in Rajgir, Bihar, from November 11-20.

This event is a milestone for Bihar, as it will take place at the newly-developed Rajgir Hockey Stadium. Top Asian teams, including India, China, Japan, and Korea, will compete in the tournament.

The event highlights Bihar's commitment to promoting hockey and hosting international sports.

140. (b)

Uttar Pradesh Chief Minister Yogi Adityanath inaugurated [Yotta D1](#) – India's second and North India's first hyper-scale data centre – in Greater Noida in Uttar Pradesh.

What is Yotta D1?

Yotta D1 is the first of the 6 data centre buildings currently being built in the Greater Noida data centre park.

The first data centre was operationalized in just 20 months with an investment of around Rs.1,500 crore.

The hyperscale data centre was developed by Yotta Infrastructure – an arm of the Hiranandani Group.

It is situated at a strategic location close to important business hubs of India's National Capital Region.

This provides a major boost for the region's digital economy.



141. (c)

Tokyo 2020 Olympics saw the introduction of mixed team events in several sports, including shooting, to promote gender equality and add a new dimension to the competitions. This was part of the International Olympic Committee's (IOC) efforts to create a more balanced representation of male and female athletes and to refresh the program with innovative event formats.

142. (d)

Dr Ashutosh Raravikar, Director in the DEPR of RBI has authored a book titled 'Indian Banking in Retrospect'- 75 years of Independence. The book attempts to capture developments in the Indian banking sector over the last 75 years. It describes how the banking sector displayed great resilience during South-East Asian crisis of the late '90s, global meltdown of 2008, the taper-tantrums of 2013-14 among other crises.

143. (b)

Exercise MAITREE is the edition of India- Thailand joint military Exercise.

The exercise was conducted from 1st to 15th July 2024 at Fort Vachiraprakan in Tak Province of Thailand. The Exercise will enhance combined capabilities in executing Joint Counter Insurgency/ Terrorist Operations in Jungle and Urban Environments under Chapter VII of the United Nations Charter.

The Indian Army contingent comprising 76 personnel is represented mainly by a Battalion of the LADAKH SCOUTS and personnel from other arms and services.

144. (d)

- India's first fully robotic telescope, the GROWTH-India telescope is located at the Indian Astronomical Observatory in Ladakh, captured a building-sized asteroid as it approached Earth.
- The telescope, part of a joint venture by IIT Bombay and the Indian Institute of Astrophysics, **tracked the asteroid's rapid movement, causing background stars to appear as streaks.** This 0.7m wide-field telescope specializes in time-domain astronomy and is **part of the Global Relay of Observatories Watching Transients Happen (GROWTH) initiative.** The project is funded by India's DST-SERB and the NSF.
- The telescope is not designed for ultraviolet, radio, or cosmic microwave background studies, but rather for capturing and analyzing transient events in the optical wavelength range.

145. (b)

Pyrenees Mountains form a natural border between France and Spain, extending from the Bay of Biscay to the Mediterranean Sea.

This mountain range also separates the Iberian Peninsula from the rest of continental Europe, and includes the tiny principality of Andorra nestled within the mountains.

146. (c)

Reserve Bank of India (RBI) warns mobile users of "juice jacking," a cyber threat where compromised USB charging stations transfer malware or steal personal data.

Coined by journalist Brian Krebs in 2011, it's not limited to phones but any USB-charged device. Perpetrators use it to install malware, steal sensitive data, or gain unauthorized access. Incidents occur in public spaces like airports, hotels, and shopping centers, raising security concerns.

147. (d)

Dr. T.V. Somanathan, a senior IAS officer of the 1987 Tamil Nadu cadre, has assumed the role of **Cabinet Secretary** for the Government of India, **succeeding Rajiv Gauba** after his superannuation. Dr. Somanathan brings extensive experience from both central and state government positions, as well as



international roles, notably at the World Bank. His academic credentials include a Ph.D. in Economics, and he is a qualified Chartered Accountant, Cost Accountant, and Company Secretary.

148. (a)

Chandrayaan-3 Mission is the second attempt of the Indian Space Research Organisation after the Chandrayaan-2 to demonstrate the capability of India in **safe landing** and roving on the lunar surface.

The Lander Module of Chandrayaan-3 carrying the Lander, Vikram and Rover, Pragyan, **made the historic soft landing on the surface of the Lunar South Pole on August 23, 2023.**

Thus, India became the first nation to soft-land on the surface of the Lunar south pole and overall the fourth to do a soft landing anywhere on the Earth's natural satellite.

Indian Space Research Organisation launched the Chandrayaan-3 Mission by using the Geosynchronous Satellite Launch Vehicle Mark III (LVM3) on 14th July 2023 from Sriharikota.

One of the many goals of the Mission is to look for water ice that could support future human life on the Moon and also for supplying propellants for spacecraft in future interplanetary missions. The **objectives of the Chandrayaan-3 mission** are:

- Safe and Soft Landing on the Lunar Surface by the Lander
- Roving on the Moon by the Rover
- In-situ scientific experiments by the Rover

Unlike Chandrayaan-2, the Chandrayaan 3 was built on-

Failure-based design” instead of the “Success-based design”:

- The failure-based design means that if everything, including sensors and electronics, had failed, Vikram would still have made the soft landing.
- This was done by identifying and rectifying all the probable scenarios that could go wrong.
- These included failure of electronics, engine failure, unable to reach the landing spot, sensor failure, algorithm failure, velocity higher than required, etc.
- Shiv Shakti Point is the name given to the landing site of the Indian Space Research Organisation's (ISRO) Chandrayaan-3 mission on the Moon

Shiv Shakti Point is the name given to the landing site of the Indian Space Research Organisation's (ISRO) Chandrayaan-3 mission on the Moon

149. (c)

- A. **Sabancaya** is located in **Peru.**
- B. **Mount Etna** is a well-known volcano located in **Italy.**
- C. **Colima** is one of the most active volcanoes in **Mexico.**
- D. **Merapi** is a very active volcano located in **Indonesia.**

150. (b)

Hume, a research lab based in New York, has introduced the first emotionally intelligent conversational AI called the Empathic Voice Interface (EVI). This AI uses live audio input to provide both audio responses and transcripts, while also measuring vocal expressions. Powered by an empathic large language model (eLLM), EVI can understand tones and word emphasis, making human-AI interactions more natural and effective. Trained on human emotional responses, it continuously learns from users to improve positive communication. By analyzing subtle speech patterns, EVI determines the appropriate time to respond and generates empathetic language.

