

Test Code 02171124



AAKALAN BPSK Prelims Test-2024

(Subject Code: 01)

ANSWER KEY

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



BPSC Prelims Test-2024

Aanklan-2-24

1. (b)

Sangam literature, an ancient Tamil literary tradition, is broadly divided into two main categories: **Akam** and **Puram**. These classifications are based on the thematic content of the poems.

Akam refers to poems that focus on the inner aspects of human life, particularly **themes of love, personal emotions, and intimate human relationships**. The word "Akam" itself means "interior" or "inner world," symbolizing the personal and emotional facets of human life. Akam poetry typically explores various stages and experiences in romantic relationships, including love, separation, union, and longing. It uses natural imagery and metaphors to subtly convey the emotions involved, following a structured set of literary conventions unique to Sangam literature.

In contrast, **Puram** poetry deals with the "outer" or public aspects of life, such as **war, valor, honor, kingship, and community life**. This category focuses on societal and heroic themes, celebrating the external accomplishments and responsibilities of individuals, particularly warriors and kings.

Tolkappiyam is an ancient Tamil grammar text, considered one of the earliest works on Tamil linguistics and poetics, but it is not specifically categorized as Akam or Puram literature.

Manimekalai is a Tamil epic and part of post-Sangam literature. It is a narrative that revolves around Buddhism and ethical themes, unrelated to the Sangam genre's Akam and Puram classification.

2. (a)

Ashokan Edicts (3rd century BCE): These are among the earliest known inscriptions, issued by Emperor Ashoka of the Maurya Dynasty. Written in Brahmi and Kharosthi scripts, they advocate

principles of **Dhamma** (moral conduct) and promote Buddhism. Ashoka's edicts span the subcontinent, demonstrating the wide influence of his governance and values.

Hathigumpha Inscription (2nd century BCE): Found in Odisha, this inscription belongs to King **Kharavela** of the Mahameghavahana dynasty. It describes his military achievements, public welfare measures, and religious activities, offering a glimpse into the politics and society of eastern India.

Girnar Inscription of Rudradaman (150 CE): An early Sanskrit inscription, this record was commissioned by **Rudradaman I**, a Saka ruler. It details the repair of the **Sudarshana Lake**, highlighting the importance of water management and infrastructure in the region. The inscription reflects the Saka-Kshatrpa influence in western India.

Aihole Inscription of Pulakesin II (634 CE): Created by **Pulakesin II** of the Chalukya dynasty, this inscription commemorates his conquests, detailing his victories against various rulers, including the Pallavas. It showcases the power and political organization in South India during the Chalukyan era.

3. (c)

Karle Caves – Karle Caves which is located in Maharashtra, are an excellent example of **Buddhist rock-cut architecture** from the early centuries of the Common Era. The site contains a large **Chaitya hall** and several Viharas, characteristic of early Buddhist monastic complexes. The Karle Caves represent the architectural and spiritual transition from **Hinayana to Mahayana Buddhism**, where the influence of Mahayana iconography begins to appear. This makes it the correct answer.

Bagh Caves – are Located in Madhya Pradesh, these caves are known for their paintings and



architectural structures. However, they primarily showcase Mahayana Buddhist art without a significant connection to the transition from Hinayana to Mahayana Buddhism.

Udayagiri and Khandagiri Caves – are Situated in Odisha, these caves are notable for their Jain inscriptions and sculptures.

Elephanta Caves – These caves are situated near Mumbai, are primarily dedicated to Hindu deities, particularly Shiva

4. (b)

Chola Dynasty – The Chola dynasty is renowned for its grand temple architecture, with one of the most iconic examples being the **Brihadeeswarar Temple** at Thanjavur. This temple is a UNESCO World Heritage site and is noted for its massive size, towering vimana (temple tower), and intricate sculptures.

Vijayanagara Empire – The Vijayanagara Empire is known for its unique architectural style that combined Dravidian and local influences, especially in the temples of Hampi. One of the most famous architectural contributions is the **Vittala Temple** with its musical pillars and stone chariot.

Pallava Dynasty – The Pallavas were pioneers in rock-cut architecture in South India. They are especially known for their contributions in Mahabalipuram (Mamallapuram), including the **Shore Temple**, which is one of the earliest examples of structural temples in South India.

Pandya Dynasty – The Pandya dynasty is associated with the Dravidian style and the development of complex temple structures. The **Meenakshi Temple** in Madurai is one of their most notable architectural achievements, famed for its towering gopurams (gateway towers) and detailed sculptures.

5. (a)

Bharatanatyam evolved in Tamil temples as a form of ritual dance – This statement is correct. Bharatanatyam originated in the temples of Tamil Nadu as a form of devotional and ritualistic dance performed by temple dancers, known as Devadasis.

Kathak was primarily associated with temple rituals in Rajasthan – This statement is incorrect. Kathak originated in North India, where it evolved as a storytelling dance form and later developed in Mughal courts rather than being primarily associated with temple rituals. It is primarily associated with Uttar Pradesh

Natyashastra by Bharata is the earliest text on performing arts – This statement is correct. The **Natyashastra**, written by the sage Bharata, is considered the earliest and most comprehensive ancient text on performing arts, covering dance, drama, and music.

Manipuri dance is based on the Raslila tradition – This statement is correct. Manipuri dance, particularly popular in the northeastern state of Manipur, draws inspiration from the Raslila tradition, which depicts the love and devotion of Radha and Krishna.

6. (b)

Puppetry has been an integral part of Indian traditional performing arts, with different regions developing unique forms of puppetry. Indian puppetry can be categorized based on the technique used, such as **shadow puppetry, string puppetry, rod puppetry, and glove puppetry.**

Tholu Bommalata is a traditional form of **shadow puppetry** from **Andhra Pradesh**. The word "Tholu" means leather in Telugu, and "Bommalata" means dance of puppets, indicating the use of **leather puppets** in this form.

Kathputli is a form of **string puppetry** native to **Rajasthan**. It does not involve shadow techniques. Instead, it uses strings attached to puppets to perform stories, often based on Rajput history and folklore.

Gombeyatta is a puppetry form from **Karnataka** and is primarily associated with **string and rod puppetry**. The term "Gombe" means doll in Kannada. This form does not involve shadow puppets.

Bommalattam, practiced in **Tamil Nadu**, is a unique combination of **string and rod puppetry**. The puppets are controlled using both strings and rods, allowing for elaborate movement. This form is not associated with shadow puppetry.



7. (a)

Megalithic structures were primarily used for burial practices – This statement is correct. Megalithic structures, such as dolmens, stone circles, and cairns, were predominantly used as burial sites and are often associated with funerary practices.

Megalithic people are believed to have introduced iron tools and weapons in India – This statement is also correct. The Megalithic culture is known for the use of iron tools and weapons, marking the beginning of the Iron Age in many parts of India.

The site of Nagarjunakonda is known for significant Megalithic remains – This statement is **incorrect**. Nagarjunakonda, located in Andhra Pradesh, is primarily known for its Buddhist remains and relics rather than Megalithic structures.

8. (b)

Satavahana dynasty, known for its extensive rule over central and southern India, is noted for its contributions to regional culture, administration, and trade during the ancient period. Their rule spanned from the 1st century BCE to the 3rd century CE, with notable rulers such as Gautamiputra Satakarni.

Satavahanas were pioneers in using coins inscribed in the **Prakrit language** with the **Brahmi script**. This practice helped in promoting regional language and cultural identity. Coins featured rulers' names and various symbols, which served as markers of their authority.

Although Satavahana rulers frequently mentioned their mother's lineage in inscriptions (e.g., Gautamiputra meaning "son of Gautami"), the succession system was **not matrilineal**. This reference highlighted respect for maternal ancestry but did not indicate inheritance through the mother's line.

Gautamiputra Satakarni is celebrated for reviving the Satavahana dynasty's power. He achieved this by **defeating the Shakas (Western Kshatrapas)**, especially Nahapana, which restored the dynasty's prominence in western and central India. His victories marked a resurgence in Satavahana territorial dominance.

Satavahana dynasty primarily supported **Brahmanism (Vedic traditions)** and was also a patron of **Buddhism**, as evidenced by their support for Buddhist stupas at sites like Amaravati and Sanchi. There is no historical evidence suggesting that they were followers of Jainism, let alone strict adherents.

9. (b)

Bharuch (Barygaza) – Located in **Gujarat**, Bharuch was an important ancient port known for its trade connections with the Roman Empire.

Sopara – Situated in **Maharashtra**, Sopara was a significant port on the western coast, contributing to trade routes within India and with regions abroad.

Tamralipta – Located in **Bengal** (modern-day West Bengal), Tamralipta was a prominent eastern port that connected India to Southeast Asia.

Arikamedu – Situated near **Pondicherry (Tamil Nadu)**, Arikamedu was an ancient port known for its trade with the Roman Empire, especially in beads and pottery.

10. (d)

The position of Amara-nayakas was hereditary and passed down through generations

Vijayanagara Empire (1336–1646 CE) was one of the prominent South Indian empires that had a well-organized administrative structure. This structure included an efficient revenue system and a hierarchical military framework. The Amara-nayaka system was a unique feature of this empire's governance, designed to decentralize power while retaining control over vast territories.

Administrative Units – Nadu, Sthala, and Grama:

The Vijayanagara Empire was divided into several administrative units for effective governance:

Nadu: A large administrative unit similar to a district.

Sthala: A sub-unit within Nadu, similar to a sub-district or block.

Grama: Refers to villages.

This division enabled efficient administration at different levels, allowing the empire to maintain control over distant territories.



The **Amara-nayakas** were military officers who were granted land (called Amara) by the king. They were responsible for maintaining a military force and collecting revenue from their assigned lands. They acted as intermediaries between the central administration and the local territories.

Vijayanagara Empire was known for its religious tolerance. Although the rulers were primarily followers of Hinduism, they encouraged religious freedom and supported multiple religious communities, including Jains and Muslims. This policy promoted cultural diversity and helped maintain social harmony within the empire.

The position of **Amara-nayakas** was **not hereditary**. They were appointed by the king, and their power was not meant to be passed down through generations. The emperor retained the right to reassign or revoke an Amara-nayaka's land or position, ensuring control over these military officers and preventing the rise of hereditary feudal lords.

11. (c)

Medieval India saw the creation of several important historical texts, which provide insights into the socio-political and cultural conditions of the time. Many of these works were authored by court historians, scholars, and rulers, documenting the reigns and achievements of various sultans and emperors.

Tabkat-e-Nasiri by Minhaj-us-Siraj:

Tabkat-e-Nasiri is a significant historical work authored by **Minhaj-us-Siraj**. This chronicle provides a detailed account of the early Islamic rule in India and covers the reign of the Delhi Sultanate up to the time of Nasiruddin Mahmud.

Futuh-at-e-Firoz Shahi by Firoz Shah Tughlaq:

Futuh-at-e-Firoz Shahi was written by **Firoz Shah Tughlaq** himself. It is an autobiographical account where he describes his own deeds, accomplishments, public works, and religious policies. This work reflects the self-perception of the ruler and his achievements.

Tarikh-i-Firozshahi by Ziauddin Barani:

Tarikh-i-Firozshahi was authored by **Ziauddin Barani**, a historian and court scholar in the Delhi Sultanate. This work is an important source

of information on the Tughlaq dynasty and provides a critical account of the rulers, including Muhammad bin Tughlaq and Firoz Shah Tughlaq

Tarikh-i-Mubarakshahi by Yahya Bin Sirhindi:

Tarikh-i-Mubarakshahi was written by **Yahya Bin Sirhindi** and focuses on the history of the Delhi Sultanate up to the reign of Sultan Mubarak Shah. This work is notable for its detailed portrayal of the political and administrative aspects of the time.

12. (c)

Theory of Divine Right of Kings holds that a king's authority is derived from a divine source and that he is accountable only to God, not to any earthly authority. This doctrine was widely influential in many parts of the world and served as a means for rulers to legitimize their power as divinely ordained. In the Delhi Sultanate, this concept was explicitly adopted to strengthen the ruler's authority over nobility and subjects.

Ghiyasuddin Balban was the first Delhi Sultan to explicitly implement the **Theory of Divine Right of Kings**. He asserted that the king was the representative of God on Earth, a position beyond question or challenge from anyone, including the nobility. Balban emphasized this divine status to reinforce his authority and maintain strict control over his court and administration.

He introduced the concept of **Zil-e-Ilahi (Shadow of God)**, promoting the idea that he ruled by divine mandate. His rigorous enforcement of this theory helped curb the power of the nobility and strengthened the centralized power of the Sultanate.

13. (c)

Several notable travelers from different parts of the world visited India during the medieval period. Their accounts provide valuable insights into the social, economic, and cultural conditions of medieval India. Each traveler came from a unique background and documented their observations in their respective works.

Ibn Battuta – Morocco:

Ibn Battuta was a famous traveler and scholar from **Morocco**. He visited India during the reign



of Muhammad bin Tughlaq and served as a Qadi (judge) in the Sultan's court. His journey is well-documented in his travelogue, the **Rihla**.

Marco Polo – Italy:

Marco Polo was a Venetian traveler from **Italy**. Although he primarily explored Asia, he is known to have traveled along the western coast of India. His descriptions of Indian society and trade were significant in introducing India to European readers.

Al-Biruni – Persia:

Al-Biruni was a scholar from **Persia** (modern-day Iran). He visited India during the time of Mahmud of Ghazni and is known for his extensive study of Indian culture, science, and religion. His famous work, **Kitab al-Hind**, provides a detailed analysis of Indian society.

Duarte Barbosa – Portugal:

Duarte Barbosa was a Portuguese traveler and writer. He visited India in the early 16th century and provided detailed accounts of the Malabar coast and the Vijayanagara Empire. His writings offer insight into the trade practices and social life in South India.

14. (a)

During the Mughal period, various governors were appointed to manage different regions and were entrusted with specific tasks, from administrative reforms to military campaigns. Their contributions were essential in maintaining control over the vast empire.

Malik Ambar – Reorganized administration in the Deccan:

Malik Ambar was an influential statesman and military leader in the Deccan. Known for his administrative genius, he reorganized the administration and introduced revenue reforms in the Deccan, particularly in the Ahmadnagar Sultanate. His innovative methods of administration posed a significant challenge to the Mughals in the region.

Raja Man Singh – Managed Bengal under Akbar's reign:

Raja Man Singh, a trusted general of Emperor Akbar, was appointed as the governor of Bengal. He played a key role in stabilizing the region,

overseeing its administration, and expanding Mughal influence. His governance helped secure Bengal under Mughal control.

Asaf Khan – Developed currency reforms in Gujarat:

Asaf Khan served as the governor of Gujarat under Akbar and was known for implementing currency reforms to stabilize the region's economy. These reforms helped integrate Gujarat's economy into the larger Mughal system, ensuring a steady flow of revenue.

Mir Jumla – Led military expeditions into Assam:

Mir Jumla, a prominent noble and general under Aurangzeb, led successful military expeditions into Assam. His campaigns expanded the Mughal influence in northeastern India, although the region remained challenging to control.

15. (b)

Akbar, one of the greatest Mughal emperors, expanded the empire through a combination of military conquests and diplomatic strategies. By the end of his reign, the Mughal Empire included several strategically and economically important regions across India.

Akbar conquered **Gujarat** in 1572, an important region for its ports and trade routes. This conquest significantly increased the Mughal Empire's control over commerce and wealth from the western coast.

Kashmir was annexed by Akbar in 1586. This beautiful and strategically located region further extended the Mughal Empire's northern boundary.

Malwa was brought under Mughal control early in Akbar's reign, in 1561. Its inclusion helped Akbar secure the central parts of India and provided access to resources and trade routes.

Hyderabad, located in the Deccan, was not directly controlled by Akbar. It remained under the control of the Qutb Shahi dynasty, which maintained semi-independence while acknowledging the Mughal supremacy.

Thus, Hyderabad was not under Akbar's direct control.



16. (d)

It led to the formation of the Hunter Commission to investigate its implementation

Rowlatt Act, also known as the Anarchical and Revolutionary Crimes Act, was enacted by the British government in 1919 to curb revolutionary activities in India. It allowed the colonial government to exercise extensive powers, including detention without trial, leading to widespread protests and opposition across the country.

The Rowlatt Act granted the government power to **imprison individuals without trial for up to two years** if they were suspected of being involved in revolutionary activities. This clause was one of the most controversial parts of the act, as it suspended civil liberties and was perceived as oppressive by the Indian population.

The act was based on the recommendations of the **Sedition Committee**, which was chaired by **Sir Sidney Rowlatt**. The committee was established to investigate and curb revolutionary activities in India, and its recommendations led to the drafting of the Rowlatt Act.

The Rowlatt Act was formally titled the **Anarchical and Revolutionary Crimes Act**. This official name reflected its intent to control revolutionary activities that were deemed a threat to British rule in India.

The **Hunter Commission** was not formed to investigate the Rowlatt Act. Instead, it was set up to investigate the **Jallianwala Bagh massacre**, which occurred on April 13, 1919, as a direct consequence of the widespread protests against the Rowlatt Act. The massacre intensified the Indian nationalist movement but was not a review of the act's implementation.

17. (a)

Home Rule Movement was launched during World War I by Annie Besant and Bal Gangadhar Tilak to demand self-governance for India. Annie Besant's **Home Rule League** played a key role in mobilizing public opinion and raising political awareness among Indians, particularly the educated middle class.

Annie Besant founded the **Home Rule League** in 1916 with the goal of achieving **self-governance**

for India. Inspired by the Irish Home Rule movement, her league sought greater autonomy within the British Empire. The league spread its message through public meetings, pamphlets, and newspapers.

The league primarily focused on mobilizing **students and middle-class professionals** who were increasingly discontented with British rule. Annie Besant's efforts were particularly effective in engaging this demographic, which played a crucial role in spreading nationalist ideas.

The **Home Rule League did not formally merge with the Indian National Congress** after World War I. Instead, the Congress incorporated some of the Home Rule League's demands and leaders into its own platform, but the league continued to operate separately for some time. Eventually, its influence diminished as other nationalist movements gained prominence.

18. (a)

The early 1930s were a period of intense negotiation and political activity in India, involving the British government and Indian leaders over demands for self-governance. These events are milestones in the Indian freedom struggle, marking key developments in the movement for independence.

Gandhi-Irwin Pact (1931):

Gandhi-Irwin Pact was signed on March 5, 1931, between Mahatma Gandhi and Lord Irwin, the then Viceroy of India. As per this pact, the British government agreed to release political prisoners, and Gandhi agreed to suspend the Civil Disobedience Movement and participate in the Second Round Table Conference.

Karachi Session of the Congress (1931):

Following the Gandhi-Irwin Pact, the **Karachi Session of the Congress** took place from March 26-31, 1931. In this session, the Congress passed significant resolutions on fundamental rights and the economic policy, setting the groundwork for future Indian aspirations.

Second Round Table Conference (1931):

Second Round Table Conference took place in London from September to December 1931. Gandhi attended as the sole representative of the Indian National Congress, but the conference



ended in disappointment as no significant concessions were made by the British government.

Poona Pact (1932):

Poona Pact was an agreement between Dr. B.R. Ambedkar and Mahatma Gandhi on September 24, 1932. This pact aimed to provide adequate representation for the depressed classes in legislative assemblies, avoiding the need for separate electorates as proposed by the British.

19. (a)

Indian Councils Act of 1861 was a significant legislative reform introduced by the British to expand the role of Indians in governance, albeit in a limited capacity. It marked the beginning of a legislative structure in British India, which would eventually evolve into more inclusive legislative reforms.

Introduction of Legislative Councils:

The Indian Councils Act of 1861 introduced the concept of **legislative councils** at both the central and provincial levels. It allowed for an expanded role in governance and permitted councils to discuss and propose legislation, though with limited powers.

Inclusion of Indians as Non-Official Members:

For the first time, the Act allowed for the inclusion of **Indians as non-official members** in the legislative councils. This was an attempt by the British to include Indian opinions in governance, even if only in a nominal way. Some prominent Indians were nominated as members in the subsequent years.

Transfer of Control of Indian Affairs:

The Act **did not** transfer control of Indian affairs from the **British Crown to the Indian Legislative Council**. The British Crown retained ultimate authority over Indian governance, with the Viceroy and his council serving under its direction. The legislative councils had limited powers and primarily acted as advisory bodies.

20. (d)

Ryotwari Settlement was one of the land revenue systems implemented by the British in India. Developed initially by Thomas Munro, it was designed as an alternative to the Zamindari system and aimed to streamline revenue collection

by dealing directly with individual cultivators or "ryots."

Ryotwari system was introduced in the **Madras, Bombay, and Assam presidencies**. This system was adopted in regions where the British administration found it more effective to collect revenue directly from individual cultivators rather than through intermediaries (zamindars).

Under the Ryotwari Settlement, the government collected revenue directly from the **peasants**, who were known as "**ryots**". This direct connection bypassed the zamindars and was meant to make the revenue system more efficient and reduce corruption by intermediaries.

In this system, the peasants or cultivators were regarded as the owners of the land. They had ownership rights, could sell, mortgage or gift the land.

21. (a)

Several British Governors-General implemented policies and reforms that had far-reaching impacts on Indian society, governance, and territorial integrity. Their actions shaped the political landscape of colonial India and often had profound social and economic implications.

Lord Dalhousie – Widow Remarriage:

Lord Dalhousie supported social reforms, including the **Widow Remarriage Act** of 1856, which legalized widow remarriage in India. This was a significant step towards social reform, aimed at improving the status of widows.

Lord Ripon – Local Self-Government:

Lord Ripon is often regarded as the "Father of Local Self-Government in India." He introduced the concept of **local self-government** in the 1880s, which laid the foundation for greater local participation in governance through municipalities and local boards.

Lord Curzon – Partition of Bengal:

Lord Curzon is infamously known for the **Partition of Bengal** in 1905. This partition divided Bengal into two provinces, which was met with widespread opposition and ultimately reversed in 1911. It was seen as an attempt to divide and rule by stoking communal divisions.



Lord Wellesley – Introduction of Subsidiary Alliance:

Lord Wellesley introduced the **Subsidiary Alliance** system, a policy that allowed the British to establish control over Indian princely states by stationing British troops and controlling foreign affairs. This policy significantly expanded British influence in India.

22. (c)

The movement had a widespread influence and led to numerous social reforms across India

Young Bengal Movement, led by Henry Louis Vivian Derozio, emerged in the early 19th century among students at Hindu College, Calcutta. It was characterized by its embrace of Enlightenment ideas, rational thinking, and a critical attitude toward traditional customs.

Henry Louis Vivian Derozio was the key figure behind the Young Bengal Movement. As a teacher at Hindu College, Calcutta, he inspired his students to question societal norms and embrace modern, liberal ideas.

The Young Bengal group emphasized **rationalism, secularism, and social reform**. Members advocated for the application of reason and rejected superstitions and orthodox practices. This was a pioneering effort to introduce secular and progressive thinking among the youth.

Although the movement was intellectually stimulating, it did not achieve widespread influence or lead to significant social reforms across India. Its impact was largely confined to Calcutta and its immediate intellectual circles, and it failed to inspire a broader movement among the masses.

The Young Bengal group promoted **Western ideals** of freedom, equality, and rationality. They openly criticized traditional Hindu customs and caste practices, advocating for a break from orthodox social structures.

23. (a)

All India Kisan Sabha (AIKS) was established to address the socio-economic struggles of the peasantry in India during the colonial period. It was instrumental in organizing peasants and advocating for their rights, particularly with

regard to land reforms, fair taxation, and relief from oppressive landlordism.

Establishment and Leadership:

AIKS was founded in 1936, during the Lucknow session of the Indian National Congress, with **Swami Sahajanand Saraswati** as its first president. He was a prominent peasant leader known for his commitment to the rights of farmers.

Aims of AIKS:

AIKS aimed to address **grievances of peasants** such as the demand for land reforms, debt relief, reduction in taxes, and an end to exploitative landlord practices. The organization sought to mobilize the peasantry and champion issues affecting rural India.

Association with the Indian National Congress:

While AIKS had close ties with various left-leaning members of the Congress, it was **not an official wing of the Congress party**. AIKS maintained some degree of autonomy, and its objectives were at times more radical than those of the Congress. The two organizations did collaborate occasionally but were independent entities.

24. (a)

This quote is attributed to **Lala Lajpat Rai**, a prominent Indian nationalist leader and freedom fighter. He made this statement after being brutally lathi-charged by British police while leading a protest against the **Simon Commission** in Lahore in 1928. The Simon Commission, which excluded any Indian members, was widely opposed as a symbol of colonial oppression.

Significance of the Statement:

Lala Lajpat Rai's powerful statement reflected his unwavering resolve against British rule. His death shortly after the lathi charge intensified anti-colonial sentiments across India and inspired further revolutionary activities, including actions by **Bhagat Singh** and his associates, who sought to avenge his death by targeting the British police officer responsible.

25. (b)

All India Women's Conference (AIWC), founded in 1927, became one of India's leading



organizations advocating for women's rights. Its primary focus was on improving the social and educational status of women and pushing for legal reforms.

AIWC was established in 1927 by a group of women, including prominent social reformers and educators, to promote **women's education** and advocate for social reforms. It sought to empower women through education and worked on issues like child marriage, women's health, and literacy.

Although **Sarojini Naidu** was a prominent women's rights advocate and member of the freedom movement, she was **not among the founding members** of AIWC. She later became associated with the organization but did not play a role in its initial establishment.

AIWC actively **pushed for legislative reforms** to enhance the legal status of women in colonial India. It advocated for laws addressing issues such as child marriage, property rights, and women's education, aiming to bring about systematic change through the legislative process.

26. (b)

The plan provided for separate electorates for religious minorities

Cabinet Mission Plan of 1946 was an important proposal by the British government, intended to discuss the future governance of India and avoid partition. It sought to devise a political framework that would satisfy various Indian political groups, especially the Congress and the Muslim League. The Cabinet Mission Plan proposed a **three-tiered federal structure**, which included a union government with limited powers and regional groupings of provinces. This structure was aimed at balancing the powers between the center and the provinces, allowing autonomy while keeping the union intact.

Contrary to the statement, the Cabinet Mission Plan **did not propose separate electorates** for religious minorities. Instead, it aimed to address communal concerns by allowing groupings of provinces based on religious majorities but avoided separate electorates, which had been a source of division.

The plan proposed the formation of a **Constituent Assembly** to draft a constitution for India. This assembly was intended to represent the diverse interests of Indian society and develop a framework for an independent India.

The Cabinet Mission Plan explicitly sought to prevent the partition of India. Although it allowed provinces to form groups with a degree of autonomy, it did not include an option for a separate Pakistan, as the British hoped to keep India unified.

27. (d)

Many lesser-known women leaders made significant contributions to the Indian freedom struggle. Their bravery and dedication to the cause of independence were instrumental in mobilizing support and challenging British rule.

Pritilata Waddedar – Attack on the Pahartali European Club:

Pritilata Waddedar was an Indian revolutionary who led an attack on the **Pahartali European Club** in Chittagong, which bore the sign "Dogs and Indians not allowed." This act was part of a larger anti-colonial campaign led by Surya Sen and highlighted the resolve of Indian revolutionaries.

Usha Mehta – Underground Radio Station:

Usha Mehta was known for her role in the **Quit India Movement**, during which she organized an underground radio station that broadcast messages of resistance and urged Indians to join the fight for freedom. This radio station became a powerful medium of communication for the movement.

Matangini Hazra – Martyred While Chanting "Vande Mataram":

Matangini Hazra was a freedom fighter from Bengal who was killed during a protest while chanting "Vande Mataram." She became a symbol of sacrifice and resilience in the struggle for independence.

Begum Rokeya – Promoted Women's Education and Social Reforms:

Begum Rokeya was a pioneering feminist and social reformer in Bengal who advocated for **women's education and social reform**. Her



efforts helped empower women and laid the groundwork for gender equality in Indian society.

28. (a)

Ilbert Bill Controversy of 1883 was a significant episode in colonial India, highlighting racial tensions and the discriminatory attitudes of the European community. The bill was proposed by Viceroy Lord Ripon's government to reduce racial inequalities in the judiciary but faced strong opposition from British residents in India.

Ilbert Bill proposed that **Indian judges should have the authority to try British offenders** in criminal cases. Prior to this, Indian judges were barred from trying Europeans, reflecting racial bias in the judicial system.

The bill was met with intense **opposition from the European community** in India, who felt that allowing Indian judges to preside over cases involving Europeans undermined their privileged position. The strong backlash led to modifications in the bill, limiting its scope.

While the Ilbert Bill Controversy did contribute to growing political awareness among Indians, it did not lead to the immediate formation of the Indian National Congress. The Congress was founded in 1885, two years after the Ilbert Bill controversy, as a platform to address Indian grievances and push for reforms.

29. (a)

In response to the Cripps Mission proposal of 1942

Cripps Mission was sent by the British government to India in 1942, during World War II, to seek Indian cooperation in the war effort by proposing certain political concessions. Sir Stafford Cripps offered India a form of dominion status after the war, with provisions for the establishment of a Constituent Assembly to draft a constitution.

Mahatma Gandhi was highly critical of the proposal, dismissing it as insufficient and insincere. He famously described it as "**a post-dated cheque on a crashing bank,**" indicating his lack of trust in British promises, especially when the proposal came at a time when Britain itself was weakened by the war.

Gandhi's response reflected the growing distrust between Indian leaders and the British government. The failure of the Cripps Mission ultimately led to the **Quit India Movement** in August 1942, where Gandhi and other leaders demanded an immediate end to British rule.

30. (a)

Rampa Rebellion (1922-1924), also known as the Manyam Rebellion, was a tribal revolt against British rule in the hilly regions of the Madras Presidency (present-day Andhra Pradesh). Led by **Alluri Sitarama Raju**, the movement was rooted in tribal grievances, particularly regarding British forest policies.

Tribal Uprising Led by Alluri Sitarama Raju:

The rebellion was spearheaded by **Alluri Sitarama Raju**, a charismatic leader who mobilized the tribal communities to resist British exploitation and oppressive policies.

Response to the Forest Act:

The rebellion was largely a reaction to the **oppressive Forest Act** enforced by the British, which restricted the tribals' access to forest resources, severely affecting their traditional way of life and livelihoods. This act symbolized the broader exploitation and economic hardship imposed by colonial rule.

End of the Rebellion:

Alluri Sitarama Raju did **not surrender**; he was eventually captured and killed by British forces. His refusal to surrender and his martyrdom made him a legendary figure in the Indian independence movement.

31. (a)

Indian Constitution provides for **reservation of seats in the Lok Sabha** for Scheduled Castes (SCs) and Scheduled Tribes (STs) to ensure their adequate representation in Parliament. This provision was introduced to address historical injustices and promote inclusive governance.

47 seats are reserved for **Scheduled Tribes (STs)** in the Lok Sabha, as per the current constitutional provisions.

32. (c)

Judicial Review is a fundamental aspect of the Indian Constitution, empowering the judiciary



to review the constitutionality of laws and actions by the executive and legislature. This concept helps to maintain the supremacy of the Constitution and ensures that no law or action violates constitutional principles.

Judicial Review allows the judiciary, particularly the Supreme Court and High Courts, to **declare any law unconstitutional** if it violates the fundamental rights or any other provision of the Constitution. This mechanism acts as a check on legislative and executive powers.

The concept of Judicial Review in India is **derived from the United States Constitution**. While not explicitly mentioned in the Indian Constitution, it has been recognized through judicial interpretation, similar to the precedent set by the U.S. Supreme Court in the case of *Marbury v. Madison*.

33. (b)

Parliament has the power to amend any part of the Constitution, including the basic structure, under Article 368

Basic structure doctrine is a judicial principle in Indian constitutional law, which holds that certain fundamental elements of the Constitution cannot be altered or destroyed through amendments by Parliament. This doctrine was established by the Supreme Court to maintain the integrity and foundational principles of the Constitution.

Introduction in Kesavananda Bharati Case:

The doctrine of basic structure was introduced in the landmark **Kesavananda Bharati case (1973)**, where the Supreme Court ruled that while Parliament has broad powers to amend the Constitution under Article 368, it cannot alter the basic structure or essential framework of the Constitution.

Limitation on Parliament's Power:

Contrary to statement (b), **Parliament does not have the power to amend the basic structure** of the Constitution. The Supreme Court, through the basic structure doctrine, restricted Parliament's power to amend certain core principles, ensuring they remain intact to protect the Constitution's original values.

Ensuring Fundamental Principles:

The basic structure doctrine ensures that **certain fundamental principles**, such as democracy, secularism, the rule of law, and judicial independence, remain unaltered. These principles are considered essential to the Constitution's character.

Minerva Mills Case:

The doctrine was further upheld in the **Minerva Mills case (1980)**, where the Supreme Court reaffirmed the basic structure doctrine as a critical safeguard for the Constitution. This ruling solidified the idea that Parliament cannot alter the core identity of the Constitution.

34. (b)

Fundamental Duties were incorporated into the Indian Constitution to remind citizens of their moral responsibilities towards the nation. These duties are enshrined in **Part IVA** of the Constitution, serving as guidelines to promote national unity and responsibility.

Incorporation through the 42nd Amendment:

Fundamental Duties were added through the 42nd Amendment Act of 1976, not the 44th Amendment. They were inspired by the Constitution of the Soviet Union and aimed at fostering patriotism and commitment to the nation.

Enforceability of Fundamental Duties:

Fundamental Duties are **not legally enforceable**. They are moral obligations intended to guide citizens but lack legal sanctions or penalties if not followed. Their inclusion is primarily symbolic, serving to encourage civic responsibility.

Duty to Promote Harmony and Brotherhood:

Among the Fundamental Duties is the responsibility to **promote harmony and the spirit of common brotherhood** among all people of India, transcending religious, linguistic, regional, or sectional diversities.

35. (a)

Maneka Gandhi v. Union of India (1978)

Concept of 'Due Process of Law' implies that laws affecting individual rights should be fair, just, and reasonable, rather than just following a prescribed procedure. This interpretation



was adopted by the Supreme Court in **Maneka Gandhi v. Union of India** in the context of Article 21, which guarantees the right to life and personal liberty.

Maneka Gandhi Case:

In the **Maneka Gandhi v. Union of India (1978)** case, the Supreme Court broadened the interpretation of Article 21 and introduced the principle of **'Due Process of Law'**. It held that any law affecting life and liberty must pass the test of reasonableness and not just procedural compliance.

Other Cases:

A.K. Gopalan v. State of Madras (1950) initially upheld the principle of "Procedure Established by Law," giving a narrower interpretation to Article 21.

Kesavananda Bharati v. State of Kerala (1973) dealt with the Basic Structure doctrine.

S.R. Bommai v. Union of India (1994) focused on federalism and the misuse of Article 356.

36. (b)

Right to Constitutional Remedies is a fundamental right provided by the Indian Constitution, ensuring that citizens can seek enforcement of their rights directly from the judiciary. It allows individuals to approach the courts to protect their Fundamental Rights.

Suspension During National Emergency:

This right is safeguarded and generally **cannot be suspended during a national emergency**. Only certain rights, such as those under Article 19, may be restricted, while the right to approach the Supreme Court under Article 32 for enforcement of Fundamental Rights is maintained.

Direct Access to the Supreme Court:

Article 32 provides **direct access to the Supreme Court** for individuals seeking enforcement of their Fundamental Rights. This provision empowers citizens by ensuring quick judicial recourse.

Provision Under Article 32:

Right to Constitutional Remedies is explicitly provided under **Article 32 of the Constitution**, which grants the Supreme Court the power to

issue writs for the enforcement of Fundamental Rights.

37. (c)

Certiorari – To transfer a case from a lower court to a higher court for review

Constitution provides for various types of writs under Article 32 and Article 226 to protect Fundamental Rights. These writs allow courts to issue specific commands and orders to prevent misuse of power and uphold justice.

Habeas Corpus:

The writ of **Habeas Corpus** is used to **release a person who has been unlawfully detained**, safeguarding individual liberty against arbitrary detention.

Mandamus:

Mandamus is issued to command a **lower court or government official to perform a specific duty** that they are legally obligated to do. It is used to enforce public duties.

Certiorari:

The writ of **Certiorari** is used to **quash the decision of a lower court** or tribunal when it acts beyond its jurisdiction or violates principles of natural justice. It does not involve transferring a case; instead, it nullifies the lower court's decision.

Quo Warranto:

Quo Warranto challenges a person's right to hold a public office, effectively **compelling them to vacate the office if they lack legal entitlement**.

38. (a)

Indian Constitution is organized into several **schedules**, each dealing with specific administrative and legal aspects. These schedules help structure governance and provide clarity on various constitutional matters.

Schedule I lists the **names of States and Union Territories** and details their territorial boundaries.

Schedule III prescribes the **forms of oaths and affirmations** to be taken by public officials, including judges, ministers, and legislators.

Schedule IV details the **allocation of seats in the Rajya Sabha** for each State and Union Territory.



Schedule VII contains the **Union, State, and Concurrent lists**, defining subjects on which these levels of government can legislate.

39. (b)

Right to Life and Personal Liberty is absolute and cannot be restricted under any circumstances

Fundamental Rights in India, enshrined in Part III of the Constitution, protect individual freedoms and ensure justice, equality, and dignity. However, some rights come with reasonable restrictions to balance individual liberties with the collective interest.

Right to Equality under Article 14 guarantees **equality before the law and equal protection of the laws** to all individuals. It ensures that the state treats everyone equally and provides protections against discrimination.

Right to Life and Personal Liberty under Article 21 is not absolute. It can be **restricted by law under reasonable conditions**, such as due process in cases of imprisonment or capital punishment. Therefore, this right is subject to judicial interpretation and certain lawful limitations.

Right to Freedom of Religion ensures that all religions are treated equally by the state, supporting secularism and preventing religious discrimination by the government.

Right against Exploitation prohibits **trafficking, forced labor, and exploitation** of individuals, protecting vulnerable sections of society from such abuses.

40. (c)

Lok Sabha is the lower house of India's Parliament and plays a vital role in the legislative process, including the passage of Money Bills, which are essential for the country's financial administration.

Quorum for Sessions: The **quorum to hold a session of the Lok Sabha is one-tenth** of its total membership, not one-third.

Money Bills in Lok Sabha:

Money Bills can only be introduced in the Lok Sabha and require its approval to proceed. The

Rajya Sabha can make recommendations, but it cannot amend or reject a Money Bill.

Speaker's Role in Joint Sittings:

The Speaker of the Lok Sabha **presides over joint sittings of Parliament**. In their absence, the Deputy Speaker presides over joint sittings.

41. (c)

Federal character of the Constitution

The **Basic Structure Doctrine**, established in the *Keshavananda Bharati v. State of Kerala (1973)* case, limits Parliament's power to amend certain core elements of the Constitution under Article 368.

Federal Character is part of the Constitution's basic structure, preserving the balance of power between the Union and the States. This feature ensures a division of powers, autonomy for states, and a cooperative federal structure.

Amendments that alter or remove the federal nature are deemed unconstitutional, as they disrupt this balance.

Unlike the federal character, **Fundamental Rights, Directive Principles of State Policy, and Residuary Powers** can be amended, provided they do not violate the basic structure.

42. (a)

Anti-Defection Law was introduced to discourage political defections by legislators, which undermined political stability. It was added to the Constitution as **Tenth Schedule** through the **52nd Amendment Act of 1985**.

Addition through 52nd Amendment Act, 1985:

The Anti-Defection Law was introduced via the **52nd Amendment Act** to prevent lawmakers from switching parties after elections.

Decision of Disqualification:

The decision on disqualification under the Anti-Defection Law is made by the **Speaker or Chairman of the respective House**, not the Election Commission.

Aim of the Law:

The Anti-Defection Law aims to **curb defections and ensure political stability** by disqualifying members who switch parties post-election.



43. (d)

Rules Committee – Recommends specific rules for the conduct of elections

Parliamentary committees are integral to the functioning of Parliament, providing detailed examination and oversight on various matters, including finance, administration, and governance.

Public Accounts Committee (PAC):

The PAC examines the reports submitted by the Comptroller and Auditor General (CAG) to ensure accountability in government spending.

Thus, option (a) is correctly matched.

Estimates Committee:

Estimates Committee reviews government expenditure and suggests policies to make government spending more efficient.

Therefore, option (b) is correctly matched.

Committee on Public Undertakings:

Committee on Public Undertakings assesses the performance of public sector enterprises and ensures their efficient functioning.

Hence, option (c) is correctly matched.

Rules Committee:

Rules Committee does not deal with election conduct but recommends procedures and rules for the orderly conduct of parliamentary business.

44. (d)

Consolidated Fund of India is the chief financial account of the Government of India. It encompasses all government revenue and expenditures, and no funds can be drawn from it without parliamentary approval.

Revenues and Loans:

All revenues and loans raised by the government are credited to the Consolidated Fund of India.

Parliamentary Authorization:

No money can be withdrawn from this fund without authorization from Parliament. This ensures legislative oversight over government expenditures.

CAG's Auditing Role:

Comptroller and Auditor General (CAG) is responsible for auditing the Consolidated Fund, ensuring transparency and accountability.

45. (a)

Parliamentary motions are tools that members of Parliament use to raise issues, hold the government accountable, and express concerns. Each motion serves a specific purpose.

Adjournment Motion:

Adjournment Motion is used to draw attention to a specific matter of urgent public importance, suspending normal business to discuss an urgent issue.

No-Confidence Motion:

No-Confidence Motion is used to assess the confidence of the House in the government. If the motion passes, the government must resign.

Censure Motion:

Censure Motion is used to criticize the policies or actions of a minister or the government. It is a form of reprimand without necessitating the resignation of the government.

Call Attention Motion:

Call Attention Motion allows a member to seek an answer from a minister on an urgent public matter, ensuring timely response and accountability.

46. (b)

Ocean currents play a critical role in shaping the climate of coastal regions. **Cold currents** generally bring dry air, leading to arid conditions in adjacent coastal areas. The southwestern coast of Africa is influenced by one such cold current that significantly contributes to the arid climate of the Namib Desert.

Benguela Current:

Benguela Current is a cold ocean current that flows northward along the southwestern coast of Africa. It brings cold, nutrient-rich waters from the Southern Ocean, which cools the air above, leading to the dry conditions characteristic of the Namib Desert.

Other Options:

Canary Current flows along the northwestern coast of Africa and also brings cold waters, but it does not affect the southwestern coast.

Agulhas Current is a warm current flowing along the southeastern coast of Africa.



Humboldt Current is a cold current along the western coast of South America, contributing to the aridity of the Atacama Desert.

47. (a)

Winds in different regions of the world have specific characteristics based on their origin and path, affecting climate conditions locally.

Chinook:

Chinook is a **warm, dry wind** that descends from the Rocky Mountains, particularly in North America. It raises temperatures rapidly as it descends, often melting snow quickly.

Föhn:

Föhn is actually a **warm, dry wind**, similar to the Chinook, descending into valleys on the leeward side of mountains, particularly in the European Alps. It is not a cold, wet wind.

Mistral:

Mistral is a **cold wind** blowing from the northwest, affecting the Mediterranean region, especially southern France. It brings cool, dry air over the area.

Sirocco:

Sirocco is a **hot, dry wind** originating from the Sahara Desert in North Africa and impacting Southern Europe, especially Italy and Greece.

48. (c)

Volcanic eruptions can have **significant global climate impacts** due to the release of ash and sulfur dioxide into the atmosphere. These particles reflect sunlight, causing a temporary cooling effect on the Earth's surface.

Mount Tambora (1815):

The eruption of **Mount Tambora in Indonesia in 1815** was one of the most powerful in recorded history. It released enormous amounts of ash and gases into the stratosphere, leading to **global cooling** and causing the "Year Without a Summer" in 1816. This led to crop failures and famines in parts of North America and Europe.

Other Options:

Mount Krakatoa erupted in 1883, also causing temporary global cooling.

Mount Vesuvius is known for its 79 AD eruption, which destroyed Pompeii.

Mount St. Helens erupted in 1980, causing significant local damage but not global climate effects.

49. (c)

Lake Chad, located in Central Africa, is one of the most significant sources of water for millions of people and supports extensive local fisheries. However, due to climate change, drought, and water diversion for agriculture, the lake has been shrinking rapidly.

Lake Chad has experienced a dramatic reduction in its size over the past few decades. This shrinkage has severely impacted local fisheries and communities that rely on the lake for sustenance and livelihood. The lake's reduction has been attributed to climate change and extensive water diversion from the rivers feeding into it.

Other Options:

Lake Victoria is the largest lake in Africa and also supports local fisheries, but it has not faced shrinkage of the scale seen in Lake Chad.

Lake Tanganyika and **Lake Malawi** are large African lakes with active fisheries, but they have not experienced significant shrinkage.

50. (a)

These **archipelagos** are located in different oceans and seas, each with unique ecological and geographical characteristics. Their placement affects local biodiversity, climate, and maritime routes.

Galápagos Islands – Pacific Ocean:

Galápagos Islands are located in the **Pacific Ocean**, off the coast of Ecuador. Known for their unique biodiversity, they were instrumental in Charles Darwin's theory of evolution.

Faroe Islands – North Atlantic Ocean:

Faroe Islands are situated in the **North Atlantic Ocean**, between Iceland and Norway. They are known for their rugged terrain and traditional fishing communities.

Azores – North Atlantic Ocean:

Azores are an archipelago in the **North Atlantic Ocean**, part of Portugal.



Seychelles – Indian Ocean:

Seychelles are located in the **Indian Ocean**, off the eastern coast of Africa. They are famous for their beautiful beaches and diverse marine life.

51. (a)

Both (A) and (R) are true, and (R) is the correct explanation of (A)

Mediterranean climate is characterized by hot, dry summers and cool, wet winters. This climate pattern is common in regions around the Mediterranean Sea and is also observed in parts of California, South Australia, and South Africa.

Influence of Subtropical High-Pressure Belt and Westerlies:

During the summer, the Mediterranean region falls under the influence of the **subtropical high-pressure belt**, which brings dry and stable conditions, leading to hot, dry weather.

In winter, the **westerly winds** shift southward, bringing moist air and precipitation to the region, resulting in wet winters.

52. (a)

Salinity of bodies of water varies due to factors such as evaporation, freshwater inflow, and geographic location. Generally, seas with higher evaporation rates and lower freshwater inputs tend to have higher salinity.

Order of Salinity:

Baltic Sea: It has one of the **lowest salinity levels** among major seas due to significant freshwater inflow from rivers and limited evaporation.

Black Sea: Slightly more saline than the Baltic, but still relatively low due to river inflow and low evaporation.

Mediterranean Sea: This sea has high salinity due to high evaporation rates and limited freshwater inflow.

Red Sea: Known for its **very high salinity**, attributed to extremely high evaporation rates and minimal river inflow.

53. (d)

Tectonic boundaries occur where Earth's tectonic plates meet, creating specific geological features based on the type of interaction—divergent, convergent, transform, or subduction.

Divergent Boundary – Mid-Atlantic Ridge:

A **divergent boundary** occurs where plates move apart, resulting in the formation of new crust. The **Mid-Atlantic Ridge** is a classic example, where the Eurasian and North American plates are diverging.

Convergent Boundary – Himalayan Mountains:

A **convergent boundary** forms where two plates collide, often creating mountain ranges. The **Himalayan Mountains** were formed by the collision of the Indian and Eurasian plates.

Transform Boundary – San Andreas Fault:

A **transform boundary** occurs where plates slide past each other. The **San Andreas Fault** in California is a well-known transform fault where the Pacific Plate moves laterally against the North American Plate.

Subduction Zone – Mariana Trench:

A **subduction zone** forms when one plate is forced under another, often creating deep ocean trenches. The **Mariana Trench** is the world's deepest ocean trench, created by the subduction of the Pacific Plate beneath the Mariana Plate.

54. (b)

Calm, dry air and high atmospheric pressure

Explanation:

Horse Latitudes are subtropical regions located at about 30 degrees north and south of the equator. These areas are characterized by **high atmospheric pressure** and minimal wind, leading to calm and dry conditions.

Climatic Conditions of the Horse Latitudes:

The high pressure in these regions results in **descending air**, which discourages cloud formation and precipitation. This creates **calm, dry conditions** and contributes to the formation of deserts in these latitudes, such as the Sahara and Australian deserts.

Other Options:

High precipitation and cyclonic activity are more characteristic of low-pressure regions near the equator or in the mid-latitudes, not the Horse Latitudes.

Strong westerly winds are found in the mid-latitudes, outside the calm zones of the Horse Latitudes.



55. (a)

Kibithu is a small town in the Anjaw district of Arunachal Pradesh, located near the Indo-China border. It is the **easternmost point** of India, situated close to the Lohit River and serving as a strategic point for defense.

56. (a)

Many major rivers in India have important tributaries that contribute significantly to their flow and geographical spread.

Godavari – Wainganga:

Wainganga is a significant tributary of the **Godavari** River, flowing through Maharashtra and Madhya Pradesh.

Narmada – Barna:

Barna is a tributary of the **Narmada** River. Barna River flows through Madhya Pradesh and is a major source of water for irrigation and other activities in central India. The **Barna Dam**, a gravity dam built on the Barna River, was completed in 1978.

Krishna – Tungabhadra:

Tungabhadra River is a major tributary of the **Krishna** River, flowing through Karnataka and Andhra Pradesh.

Mahanadi – Seonath:

Seonath River is one of the main tributaries of the **Mahanadi**, flowing through the Chhattisgarh region.

57. (a)

Himalayan passes have historically served as critical trade and travel routes between India and neighboring countries. Each pass is strategically located, influencing trade, defense, and cultural exchange.

Nathula Pass:

Nathula Pass, located in Sikkim, is one of the key **trade routes between India and China**. It connects the Indian state of Sikkim with the Tibet Autonomous Region of China and has been a historic trade route since ancient times.

Other Options:

Shipki La is a pass in Himachal Pradesh connecting India with Tibet but is not in Sikkim.

Lipulekh Pass is located in Uttarakhand and serves as a route to Kailash Mansarovar.

Rohtang Pass is in Himachal Pradesh, connecting the Kullu Valley with Lahaul and Spiti, but it is not on the Indo-China border.

58. (b)

National Waterways in India are inland water transport routes designated to enhance transportation connectivity within the country. Each National Waterway has a specific route, connecting important cities and ports.

National Waterway 2 is the **Brahmaputra River system** stretching over Assam and connecting with West Bengal, leading to the port city of Kolkata. It facilitates trade and transport across northeastern India.

National Waterway 1 spans the Ganga-Bhagirathi-Hooghly river system from Allahabad to Haldia.

National Waterway 3 is located in Kerala, covering the west coast canal from Kollam to Kottapuram.

National Waterway 4 covers the Krishna and Godavari river systems in Andhra Pradesh and Tamil Nadu.

59. (c)

Laterite Soil – High fertility, commonly used for rice cultivation

Explanation:

India has diverse **soil types** that vary based on geographic regions and are characterized by distinct physical and chemical properties, influencing their agricultural suitability.

Black soil has high moisture retention, making it ideal for **cotton cultivation**. It is also known as regur soil and is primarily found in the Deccan Plateau.

Red soil is rich in iron, giving it a reddish color. It is commonly found in parts of Eastern and Southern India, such as Odisha and Tamil Nadu.

Laterite soil is generally low in fertility due to leaching and is rich in iron and aluminum. It is commonly found in hilly areas with heavy rainfall, such as in Karnataka and Kerala, and is **not ideal for rice cultivation**.



Alluvial soil is fertile and found in river valleys like the Indo-Gangetic Plain. It is suitable for growing crops such as **wheat and rice**.

60. (c)

India has several natural lakes spread across different states, each with unique ecological and geographical significance.

Loktak Lake – Manipur:

Loktak Lake is the largest freshwater lake in **Manipur** and is known for its floating phumdis (masses of vegetation and soil).

Chilika Lake – Odisha:

Chilika Lake is a brackish water lagoon located in **Odisha**. It is one of the largest coastal lagoons in India and a significant habitat for migratory birds.

Sambhar Lake – Rajasthan:

Sambhar Lake is the largest inland saltwater lake in India, situated in **Rajasthan**. It is famous for salt production.

Wular Lake – Jammu and Kashmir:

Wular Lake is one of the largest freshwater lakes in **Jammu and Kashmir**. It plays a crucial role in the hydrology of the Kashmir Valley.

61. (c)

GST (Goods and Services Tax) was introduced in India in 2017 to consolidate multiple indirect taxes into a single tax system. It aimed to streamline the taxation process and reduce the complexity of indirect taxes on goods and services.

Service Tax under GST:

Service Tax was an indirect tax levied on services, which was subsumed under GST to simplify taxation on services. Under GST, both goods and services are taxed uniformly, eliminating the need for a separate service tax.

Other Options:

Corporation Tax is a direct tax on corporate profits and is not part of GST.

Customs Duty is levied on imports and exports and remains outside GST.

Stamp Duty is a state-level tax on property transactions and is also not subsumed under GST.

62. (b)

Types of unemployment vary based on causes, such as economic cycles, seasonal factors, skills mismatches, and job transitions. Each type of unemployment affects different sectors and requires specific policies for mitigation.

Frictional Unemployment:

Frictional unemployment occurs when individuals are temporarily unemployed while **transitioning between jobs** or searching for new opportunities.

Structural Unemployment:

Structural unemployment is caused by a **mismatch between workers' skills and the skills needed for available jobs**. This often occurs due to technological advancements or shifts in industry demands.

Seasonal Unemployment:

Seasonal unemployment is common in **agriculture and allied sectors**, where work availability depends on the season or harvest cycle.

Cyclical Unemployment:

Cyclical unemployment is related to the **business cycle phases**, where unemployment rises during economic downturns and decreases in periods of growth.

63. (a)

Integrated Rural Development Programme (IRDP)

India's **Five-Year Plans** focused on economic development and poverty alleviation, especially in rural areas. The **Sixth Five-Year Plan (1980-1985)** emphasized integrated rural development to improve rural incomes and productivity.

Integrated Rural Development Programme (IRDP):

IRDP was launched during the Sixth Five-Year Plan and aimed to provide opportunities for self-employment to the rural poor. It was one of India's first major efforts in **integrated rural development**, targeting the upliftment of small and marginal farmers, landless laborers, and rural artisans.



Other Options:

Swarnajayanti Gram Swarozgar Yojana (SGSY) was launched in 1999 to promote self-employment in rural areas, much later than the Sixth Plan.

Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in 2000 to improve rural connectivity.

National Watershed Development Project for Rainfed Areas (NWDPA) was introduced in 1990, focusing on rainfed agricultural areas.

64. (b)

Greater volatility in the exchange rate

In an **exchange rate regime**, countries can adopt different approaches. A **managed float** is where the central bank intervenes occasionally to stabilize the currency, while a **free-floating regime** allows the currency's value to be determined purely by market forces.

Greater Volatility in a Free-Floating Exchange Rate:

Shifting to a **free-floating exchange rate regime** would mean that the value of the Indian Rupee would be determined entirely by demand and supply in the foreign exchange market, without intervention by the Reserve Bank of India (RBI). This could lead to **greater volatility** in the exchange rate, as fluctuations would depend on market dynamics, including global capital flows, economic conditions, and investor sentiments.

Other Options:

Increased control over currency appreciation would be unlikely since the central bank's role in influencing the currency value would be reduced in a free-floating regime.

Stabilization of exchange rates in times of crisis would be less likely in a free-float system, as the currency would react directly to market conditions without central bank intervention.

Enhanced predictability of currency value is less likely in a free-floating system, as the exchange rate would be influenced by unpredictable market factors.

65. (d)

NHB – Financing for healthcare infrastructure
India has various specialized financial institutions

created to serve specific economic sectors, each with distinct mandates to promote development in those areas.

NABARD:

NABARD (National Bank for Agriculture and Rural Development) focuses on **agricultural and rural development financing**, supporting rural infrastructure, agriculture, and allied sectors.

SIDBI:

SIDBI (Small Industries Development Bank of India) is dedicated to **financing and developing MSMEs** (Micro, Small, and Medium Enterprises) in India, fostering growth in this sector.

EXIM Bank:

EXIM Bank (Export-Import Bank of India) is responsible for **providing financing to promote exports and imports**. It assists Indian businesses in global trade.

NHB:

NHB (National Housing Bank) is focused on **housing finance** and regulating housing finance companies, not healthcare infrastructure. It supports affordable housing development and mortgage lending in India.

66. (c)

Capital expenditure in the Union Budget refers to the spending on assets and infrastructure projects to promote long-term economic growth. It includes investments in areas like roads, railways, energy, and digital infrastructure.

Budget 2024-25 Capital Outlay:

For the fiscal year 2024-25, the **total capital expenditure outlay** is projected to be **₹11.1 lakh crore**, marking a continued emphasis on infrastructure development to boost economic productivity and create jobs.

67. (d)

The Five-Year Plans in India were each based on specific economic models tailored to address the country's developmental priorities. Here's how the plans align with their respective models:

First Five-Year Plan (1951–1956)

Model: Harrod-Domar Model

This plan focused on increasing agricultural production and aimed at a balanced growth model



suited to an economy facing resource scarcity. The Harrod-Domar model, emphasizing savings and investment as growth drivers, suited these early-stage needs.

Second Five-Year Plan (1956–1961)

Model: Mahalanobis Model

The plan emphasized rapid industrialization, particularly in heavy industries, to build a strong industrial base. The Mahalanobis model, developed by statistician P.C. Mahalanobis, prioritized the production of capital goods, aiming to reduce dependency on imports and boost self-reliance.

Third Five-Year Plan (1961–1966)

Model: Sukhamoy Chakravarty Model

This plan aimed at a self-sustaining economy and emphasized agriculture and industry. The model suggested by economist Sukhamoy Chakravarty guided this plan to balance agricultural and industrial growth.

Fourth Five-Year Plan (1969–1974)

Model: Gadgil Formula

This plan focused on reducing inequalities, poverty alleviation, and enhancing social justice. The Gadgil formula, used in resource allocation to states, was influential in shaping the Fourth Plan’s approach to equitable development.

68. (b)

Indirect taxes on products

Gross Value Added (GVA) at basic prices is a measure of the total output in an economy, excluding taxes but including subsidies on products. It is an essential metric for understanding the value added by different sectors.

Exclusion of Indirect Taxes:

When calculating GVA at basic prices, **indirect taxes on products** are excluded. This is because GVA at basic prices represents the actual production value without additional charges like taxes.

Other Components:

Subsidies on products are included in the calculation as they reduce the cost of production.

Compensation of employees and consumption of fixed capital are part of GVA at basic prices,

reflecting wages, salaries, and depreciation in production.

69. (d)

GST Council is a constitutional body in India responsible for making decisions on Goods and Services Tax policies, tax rates, and regulations. It includes representatives from the central and state governments.

Statement 1 – Chairmanship of GST Council:

The **Union Finance Minister** chairs the GST Council, not the Prime Minister. Therefore, this statement is incorrect.

Statement 2 – Decision-Making in GST Council:

Decisions in the GST Council require a **three-fourths majority**, with the central government having a one-third vote share, and the states having a two-thirds share. This statement is correct.

Statement 3: Centre and states have equal voting power in the GST Council.

Incorrect: The Centre has **one-third (33%) of the voting power**, while the states collectively hold **two-thirds (67%)**. This setup ensures that neither the Centre nor the states alone can make unilateral decisions.

70. (c)

Union Budget 2024-25 focused on enhancing growth through significant capital expenditure, particularly aimed at **infrastructure development**. Investments in infrastructure are crucial for improving connectivity, supporting industries, and fostering economic growth.

Highest Allocation to Infrastructure:

In the 2024-25 budget, **infrastructure received the highest allocation**, reflecting the government’s commitment to modernizing transportation, logistics, and digital infrastructure. This allocation aims to boost long-term productivity and economic growth.

71. (c)

Appreciation of the domestic currency

Inflation in an economy can be influenced by various factors. When the domestic currency appreciates, imported goods and raw materials



become cheaper, which can help reduce inflationary pressures.

Appreciation of Domestic Currency:

When a **domestic currency appreciates**, the cost of imports decreases, which can lead to lower prices for imported goods and raw materials. This reduced cost can help control inflation, especially in countries dependent on imports.

Other Options:

High consumer demand typically increases inflationary pressure.

Increasing global oil prices raise production and transportation costs, contributing to inflation.

Expansionary fiscal policy, which increases government spending or cuts taxes, tends to boost demand, potentially increasing inflation.

72. (c)

Remittances are financial transfers made by migrant workers back to their home country. India consistently ranks as one of the top remittance-receiving countries, which contributes significantly to foreign exchange reserves and economic stability.

Total Remittance Inflow in 2023:

According to the **Economic Survey 2023-24**, India received **USD 120 billion** in remittances in 2023, further strengthening its position as a top global remittance recipient. This inflow supports the country's balance of payments and contributes to household income.

73. (b)

Sickle cell anemia is a genetic blood disorder that affects hemoglobin, the protein in red blood cells responsible for carrying oxygen throughout the body.

Mutation in Hemoglobin:

Sickle cell anemia is caused by a mutation in the **hemoglobin protein**, specifically in the beta-globin gene (HBB), leading to an abnormal hemoglobin form known as hemoglobin S (HbS). This causes red blood cells to take on a sickle shape, which can block blood flow and lead to pain and organ damage.

Other Options:

Insulin regulates blood glucose levels, but it is not involved in sickle cell anemia.

Collagen is a structural protein in connective tissue.

Myosin is a motor protein involved in muscle contraction.

74. (a)

Type 1 diabetes mellitus is an autoimmune disorder where the body's immune system attacks and destroys the beta cells in the pancreas that produce insulin, leading to high blood glucose levels.

Type 1 Diabetes Mellitus:

In **Type 1 diabetes mellitus**, the immune system mistakenly targets and destroys **insulin-producing beta cells**, resulting in an inability to produce insulin, which is essential for glucose regulation.

Other Options:

Type 2 diabetes mellitus is associated with insulin resistance, not autoimmune destruction.

Addison's disease involves adrenal gland dysfunction.

Cushing's syndrome is characterized by high cortisol levels, not related to beta cell destruction.

75. (d)

Plant hormones play specific roles in regulating plant growth, development, and stress responses. Each hormone has distinct functions that help the plant respond to environmental conditions.

Auxin: **Auxin** promotes **apical dominance**, where the main shoot grows dominantly, inhibiting the growth of lateral buds to support vertical growth.

Cytokinin: Cytokinins inhibit the decomposition of chlorophyll, nucleic acids, and proteins, which helps to delay plant senescence.

Abscisic Acid: **Abscisic acid** (ABA) is crucial for **stomatal closure**, helping plants conserve water during stress, and is also involved in inducing seed dormancy.

Ethylene: **Ethylene** is a hormone that promotes **fruit ripening** and is involved in the aging and shedding of leaves.



76 (b)

Low-density lipoprotein (LDL)

Cholesterol is transported in the blood by lipoproteins, which vary in density and impact on cardiovascular health. Low-density lipoprotein (LDL) is known as "bad cholesterol" due to its tendency to deposit cholesterol on the walls of blood vessels, increasing the risk of plaque formation and cardiovascular disease.

Low-Density Lipoprotein (LDL) – Bad Cholesterol:

LDL carries cholesterol from the liver to the tissues. Excess LDL can deposit cholesterol in the arterial walls, forming plaques that narrow and harden arteries, which may lead to heart disease, heart attacks, and strokes.

Other Options:

High-density lipoprotein (HDL) is considered "good cholesterol" as it helps remove excess cholesterol from the bloodstream, transporting it back to the liver.

Very-low-density lipoprotein (VLDL) mainly carries triglycerides rather than cholesterol and is also associated with cardiovascular risk but not specifically labeled as "bad cholesterol."

Chylomicrons transport dietary lipids from the intestines to other parts of the body and are not directly linked to cholesterol levels in the way LDL is.

77. (c)

Hydrogen bond

DNA structure consists of two complementary strands that are held together to form a double helix. Understanding the bonding mechanism between these strands is key to comprehending DNA's stability and replication.

Hydrogen Bonds in DNA: In DNA, **hydrogen bonds** form between the nitrogenous bases on the two strands, specifically between adenine and thymine (A-T) and between cytosine and guanine (C-G). These hydrogen bonds stabilize the double-stranded structure but are weak enough to allow strand separation during DNA replication.

78. (c)

Vitamin C

Vitamins are essential nutrients, and they are classified as either water-soluble or fat-soluble.

Water-soluble vitamins cannot be stored in the body and therefore must be consumed regularly.

Water-Soluble Vitamin – Vitamin C:

Vitamin C is a water-soluble vitamin, meaning it dissolves in water and is not stored in the body. Regular intake through diet is necessary to prevent deficiencies, such as scurvy.

Other Options:

Vitamin A, D, and K are fat-soluble vitamins, meaning they can be stored in the body's fat tissues and do not require daily consumption.

79. (a)

DNA is the genetic material in cells, structured as a double helix with specific base pairing. It is located primarily in the nucleus of eukaryotic cells but can also be found in organelles like mitochondria.

Correct Statements:

Statement 1: DNA is indeed **double-stranded** and forms a **helical structure**, known as the double helix.

Statement 2: In DNA, **adenine pairs with thymine** and **cytosine pairs with guanine** through hydrogen bonds, maintaining the double-helix structure.

Therefore, statements 1 and 2 are correct.

Incorrect Statement:

Statement 3: While DNA is primarily found in the nucleus of eukaryotic cells, it is also present in **mitochondria** (and chloroplasts in plants), making this statement partially incorrect.

80. (c)

Enzymes are consumed in the reaction they catalyze

Enzymes are biological catalysts that speed up chemical reactions in the body without being consumed. Each enzyme is specific to a particular reaction or type of reaction.

Statement (c) is incorrect because enzymes are **not consumed in the reactions** they catalyze. They remain unchanged and can be used repeatedly to catalyze the same reaction.

Other Options:

Statement (a) is correct: Enzymes act as catalysts, accelerating biochemical reactions.



Statement (b) is correct: Most enzymes are proteins.

Statement (d) is correct: Enzymes are highly specific, meaning they typically catalyze only one type of reaction.

81. (b)

Diseases can originate from different pathogens, such as bacteria, viruses, and protozoa. Protozoan parasites are single-celled organisms that cause specific diseases, often transmitted through vectors like mosquitoes.

Malaria – Caused by a Protozoan Parasite:

Malaria is caused by a **protozoan parasite** of the genus *Plasmodium*, which includes species such as *Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium ovale*, and *Plasmodium malariae*. This parasite is transmitted to humans via the bite of infected female Anopheles mosquitoes, leading to symptoms like fever, chills, and anemia.

Other Options:

Cholera is caused by the bacterium *Vibrio cholerae*, leading to severe diarrhea and dehydration.

Tuberculosis is caused by the bacterium *Mycobacterium tuberculosis*, affecting primarily the lungs.

Typhoid is caused by the bacterium *Salmonella typhi*, leading to fever, weakness, and gastrointestinal symptoms.

82. (a)

Mitosis is the process of cell division that results in two identical daughter cells, each with the same number of chromosomes as the parent cell. The stages of mitosis occur in a specific sequence to ensure proper distribution of genetic material.

Correct Order of Mitosis Stages:

Prophase: Chromatin condenses into visible chromosomes, and the mitotic spindle begins to form.

Metaphase: Chromosomes align at the cell's equatorial plate, ready to be separated.

Anaphase: Sister chromatids are pulled apart to opposite poles of the cell.

Telophase: Chromatids reach the poles, and a nuclear membrane reforms around each set, completing the division.

Thus, the correct order is 2, 1, 4, 3, making option (a) correct.

83. (b)

Fundamental forces in nature are mediated by specific particles known as force carriers or gauge bosons. The **strong nuclear force** is one of these fundamental forces and plays a critical role in holding the atomic nucleus together by binding protons and neutrons.

Gluon – Mediator of the Strong Nuclear Force:

Gluons are the exchange particles, or gauge bosons, responsible for mediating the **strong nuclear force**. They act between quarks, holding them together within protons and neutrons and, by extension, maintaining the integrity of the atomic nucleus.

Other Options:

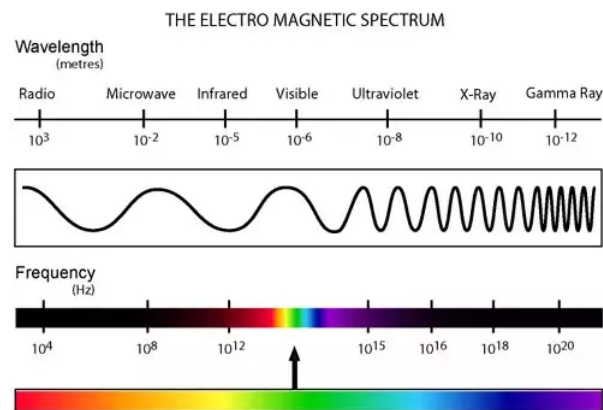
Photon mediates the electromagnetic force.

W Boson and **Z Boson** mediate the weak nuclear force, responsible for certain types of radioactive decay.

Neutrinos are fundamental particles involved in weak interactions but do not mediate any force.

84. (a)

Electromagnetic spectrum arranges radiation types by wavelength and frequency. As wavelength increases, energy and frequency decrease.



Correct Order of Increasing Wavelength:

X-rays have shorter wavelengths than ultraviolet.

Ultraviolet has shorter wavelengths than infrared.

Infrared has shorter wavelengths than microwaves.

Microwaves have the longest wavelength among the options given.



Thus, the correct order is X-rays, Ultraviolet, Infrared, Microwaves, or 3, 1, 2, 4, making option (a) correct.

85. (a)

Newton's First Law

Newton's First Law of Motion, also known as the law of inertia, states that an object in motion will stay in motion unless acted upon by an external force. This law explains why passengers tend to continue moving forward when a car stops suddenly.

When a car abruptly stops, the body of the passenger, due to inertia, continues to move forward. This is because no force immediately stops the passenger's body at the same rate as the car.

Other Options:

Newton's Second Law explains the relationship between force, mass, and acceleration.

Newton's Third Law states that for every action, there is an equal and opposite reaction.

Law of Gravitation concerns the gravitational attraction between masses, which is unrelated to inertia in this context.

86. (b)

Diffraction

Wave phenomena in light include properties like interference, diffraction, and polarization. **Diffraction** is the bending of light waves around obstacles and through small openings, demonstrating light's wave nature.

Wave Nature of Light – Diffraction:

Diffraction occurs when light waves encounter an obstacle or slit, bending and spreading out as they pass through. This phenomenon can only be explained by the wave nature of light.

Other Options:

Photoelectric effect and **Compton effect** are explained by the particle nature of light.

Radioactive decay is a nuclear phenomenon, unrelated to the wave or particle nature of light.

87. (a)

It increases the temperature at which water boils

A **pressure cooker** operates by creating a sealed environment that increases pressure, affecting the

boiling point of water and cooking efficiency.

Increased Boiling Temperature:

In a pressure cooker, the sealed environment raises the **pressure inside**, which in turn **increases the boiling point of water** above the standard 100°C. With a higher boiling temperature, food cooks faster as it is exposed to higher heat.

Thus, option (a) is correct.

Other Options:

Lowering the boiling point would decrease cooking speed.

Preventing water evaporation and **adding heat directly** are not mechanisms that specifically explain faster cooking in a pressure cooker.

88. (c)

Sound waves in air are transverse waves

Waves are classified based on the direction of particle movement relative to the wave's direction. **Transverse waves** have particle motion perpendicular to the wave direction, while **longitudinal waves** have parallel particle motion.

Incorrect Statement – Sound Waves in Air:

Sound waves in air are **longitudinal waves**, meaning the particles of the medium move parallel to the direction of the wave's propagation. Therefore, the statement "Sound waves in air are transverse waves" is incorrect.

Other Options:

Transverse waves move perpendicular to the wave direction, as seen in water waves.

Longitudinal waves move parallel to the wave direction, as seen in sound waves.

Light waves are electromagnetic and can travel through a vacuum, which is correct.

89. (b)

Metal is a better conductor of heat than wood

When two objects are at room temperature, how warm or cold they feel to the touch depends on how efficiently they conduct heat away from your skin.

Metal is a much better **conductor of heat** than wood. When you touch a metal spoon, it quickly conducts heat away from your skin, making it feel colder. In contrast, wood, being a poor



conductor, does not conduct heat away from your skin as efficiently, so it feels warmer.

90. (c)

Subatomic particles vary in mass, with electrons being the lightest, followed by protons and neutrons, and alpha particles being the heaviest. Knowing the relative masses helps in understanding atomic structure and particle physics.

Order of Increasing Mass:

Electron is the lightest particle among the options.

Proton has a mass roughly 1.836 times that of an

- **Electron** $\approx 9.11 \times 10^{-31}$ kg
- **Proton** $\approx 1.67 \times 10^{-27}$ kg
- **Neutron** $\approx 1.675 \times 10^{-27}$ kg
- **Alpha particle** $\approx 6.68 \times 10^{-27}$ kg

Increasing Order of Mass: Electron < Proton < Neutron < Alpha particle

91. (b)

Pascal's Law

Hydraulic brakes use the principle of transmitting pressure through a fluid to apply force. The foundational concept for hydraulic systems, including brakes, is Pascal's Law.

Pascal's Law:

Pascal's Law states that pressure applied to an enclosed fluid is transmitted uniformly in all directions. This principle allows a small force applied to a master cylinder in hydraulic brakes to be amplified and exerted as a larger force at the brake pads, enabling the vehicle to stop.

Thus, option (b) is correct.

Other Options:

Boyle's Law relates to the pressure and volume of gases at constant temperature.

Bernoulli's Principle explains the relationship between the speed and pressure of a fluid, primarily applicable to fluid dynamics.

Archimedes' Principle involves buoyancy and the displacement of fluids, unrelated to hydraulic systems.

92. (c)

Energy – Pascal

SI units provide standardized measurements for various physical quantities. Each quantity has a specific unit associated with it in the International System of Units.

Incorrectly Matched Pair – Energy and Pascal:

Energy is measured in **Joules (J)**, not Pascal. Pascal is the unit of pressure.

Thus, option (c) is the incorrectly matched pair.

Correctly Matched Pairs:

Power is measured in **Watts (W)**.

Force is measured in **Newtons (N)**.

Electric Current is measured in **Amperes (A)**.

93. (c)

James Chadwick

The **neutron** is a subatomic particle with no electric charge, located in the nucleus of an atom. Its discovery was crucial to advancing the understanding of atomic structure.

Discovery of the Neutron – James Chadwick:

James Chadwick discovered the **neutron** in 1932. This discovery helped explain atomic mass discrepancies and paved the way for advancements in nuclear physics and atomic models.

Other Scientists:

J.J. Thomson discovered the electron.

Ernest Rutherford discovered the proton and developed the nuclear model of the atom.

Niels Bohr contributed to the atomic model, particularly the structure of electron orbits around the nucleus.

94. (c)

Metals are generally located on the right side of the periodic table

The **periodic table** organizes elements based on their atomic number, electron configuration, and recurring chemical properties. This organization helps predict the properties of elements.



Incorrect Statement – Metals on the Right Side:

Metals are actually located on the left side and center of the periodic table, primarily in Groups 1 and 2 and in the transition metals section. Nonmetals, including noble gases, are located on the right side of the periodic table.

Thus, option (c) is the incorrect statement.

95. (a)

Elements have specific industrial applications based on their chemical and physical properties, such as reactivity, stability, and inertness.

Correct Matches:

Helium: Helium is a non-flammable gas used in **gas balloons** and as a **coolant** in various applications due to its low boiling point.

Chlorine: Chlorine is commonly used for **water purification** due to its disinfectant properties.

Sulfur: Sulfur is a primary ingredient in the **production of sulfuric acid (H_2SO_4)**, which is widely used in industry.

Argon: Argon, an inert gas, is used in **welding** to prevent oxidation during the welding process.

Thus, option (a) is correct.

96. (a)

Sodium Bicarbonate

Antacids are compounds that neutralize excess stomach acid (hydrochloric acid) to relieve symptoms like heartburn and indigestion. These compounds are usually basic in nature.

Sodium Bicarbonate – Common Antacid:

Sodium bicarbonate ($NaHCO_3$) is a mild base that reacts with stomach acid (HCl) to form salt, water, and carbon dioxide, thereby neutralizing the acid and relieving discomfort.

Other Options:

Calcium Chloride is not an antacid; it's used in de-icing and as a food additive.

Ammonium Nitrate is used as a fertilizer and in explosives.

Potassium Permanganate is an oxidizing agent and disinfectant.

97. (b)

Hydrogenation is a chemical process commonly used in the food industry to convert vegetable oils

into semi-solid or solid fats, such as margarine and shortening, by adding hydrogen atoms.

Hydrogenation:

Hydrogenation involves the addition of hydrogen to unsaturated fats in vegetable oils, which increases the saturation and solidifies the fat. This process improves shelf life and stability of the product.

Thus, option (b) is correct.

Other Options:

Fermentation is a biological process involving microorganisms to convert sugars into alcohol or acids.

Dehydrogenation is the removal of hydrogen, which is the opposite of hydrogenation.

Oxidation refers to a reaction where a substance loses electrons, often involving oxygen, and does not result in the formation of solid fats.

98. (b)

Project Tiger was launched in **1973** by the Government of India to combat the alarming decline in the tiger population.

The program was initiated with the aim of **protecting Bengal tigers** by conserving their natural habitats and creating reserves to support tiger population recovery.

Starting with **nine tiger reserves** in different parts of the country, Project Tiger has now expanded to include over 50 reserves, covering extensive areas of prime tiger habitat.

It has played a significant role in **raising awareness about tiger conservation** and has set up a framework for scientific wildlife management, including habitat protection, strict patrolling, and monitoring tiger populations.

Project Tiger remains one of the world's most renowned wildlife conservation programs, emphasizing the ecological importance of tigers as an apex predator and their role in maintaining the health of forest ecosystems.

99. (c)

Parasitism – Both species benefit

Ecological relationships describe the interactions between different species in an ecosystem, ranging from mutual benefits to one-sided harm.



Incorrect Match – Parasitism:

Parasitism is a relationship where **one species benefits at the expense of the other**. The parasite gains nourishment or habitat, while the host is harmed in some way. Therefore, "Parasitism – Both species benefit" is incorrect.

Thus, option (c) is the incorrect match.

Other Options:

Mutualism benefits both species.

Commensalism benefits one species while leaving the other unaffected.

Amensalism harms one species, with no effect on the other.

100.(c)

Ecological tipping point

An **ecological tipping point** refers to a critical threshold at which an ecosystem undergoes irreversible changes, often due to environmental stress, leading to a permanent alteration in ecosystem structure or function.

Ecological Tipping Point:

An **ecological tipping point** is reached when damage to an ecosystem becomes irreversible, resulting in the collapse of ecosystem functions or loss of biodiversity. This is often caused by factors like pollution, deforestation, or climate change.

Thus, option (c) is correct.

Other Options:

Critical threshold is a general term and may or may not imply irreversibility.

Carrying capacity refers to the maximum population size an ecosystem can support sustainably.

Point of no return is a broader term and not specific to ecosystems.

101.(a)

Patna Kalam is a distinctive style of painting that developed in the Patna region of Bihar, influenced by Mughal art yet with unique features depicting the daily life and culture of the region.

Correct Statements:

Statement 1: Patna Kalam was indeed **influenced by Mughal miniature painting**, adopting its intricate details and elegance.

Statement 2: The style is known for its **focus on daily life scenes**, such as markets, festivals, and local customs, making it distinct from the formal themes of Mughal art.

Thus, statements 1 and 2 are correct.

Incorrect Statement:

Statement 3: Patna Kalam rose to prominence during the late Mughal period, not during the **Delhi Sultanate**. Its development was primarily in the 18th and 19th centuries.

102.(a)

Bihar was home to some of the earliest and most renowned ancient universities in India, which played a significant role in the dissemination of knowledge in philosophy, science, and religion.

Order of Establishment:

Nalanda University: Founded in the 5th century CE, it was one of the earliest and most prominent centers of learning.

Odantapuri University: Established in the 8th century CE, it served as another important educational institution in the region.

Vikramashila University: Founded in the 8th-9th century CE by the Pala kings, it was known for specialized study in Tantric Buddhism.

Mithila University: Established later, this university developed as a significant center for learning, especially in law and philosophy.

Thus, the correct order is 1, 3, 2, 4, making option (a) correct.

103.(d)

Why Socialism?

Jayaprakash Narayan was a prominent Indian independence activist and political thinker who advocated for **Sarvodaya (welfare of all)** and socialism. He wrote several works outlining his ideas on equitable society and political philosophy.

Why Socialism?:

In "**Why Socialism?**", Jayaprakash Narayan discusses his vision of socialism as a path toward achieving a just and equitable society. This book encapsulates his thoughts on eliminating inequalities and promoting welfare.



Other Options:

India Divided was authored by Dr. Rajendra Prasad.

Prison Diary was written by Jayaprakash Narayan but does not focus primarily on Sarvodaya and socialism.

Towards Struggle is not a recognized work on Jayaprakash Narayan's political philosophy.

104.(a)

Bhikhari Thakur was a celebrated playwright, poet, and actor from Bihar, renowned for his contributions to Bhojpuri literature and culture. His works often focused on the social issues faced by the Bhojpuri-speaking community.

Correct Statements:

Statement 1: Bhikhari Thakur is popularly known as the "**Shakespeare of Bhojpuri**" due to his significant contributions to Bhojpuri theater and literature.

Statement 2: His most famous play, "**Bidesiya**," explores the theme of **migration** and its social impact on Bhojpuri society, highlighting the emotional struggles of families separated by migration.

Thus, statements 1 and 2 are correct.

Incorrect Statement:

Statement 3: Bhikhari Thakur was not a prominent leader of the Indian National Congress. His influence was cultural rather than political.

105.(a)**Formation of the Famine Commission**

Bihar Famine of 1873-74 highlighted the need for systematic famine relief and prevention strategies in India, leading the British government to take measures to prevent future crises.

Formation of the Famine Commission:

The Bihar Famine prompted the British Government to establish the **Famine Commission** to study famine causes and recommend relief policies. This was an important step toward developing a structured approach to managing food scarcity and providing relief in times of famine.

106.(c)

Nalanda University, located in Bihar, was one of the earliest residential universities and attracted

students from across Asia. The **Gupta dynasty** provided extensive support to the university, promoting it as a center of learning.

Assertion and Reason Analysis:

Assertion (A) is correct because **Gupta patronage** was a significant factor in Nalanda University's growth as a renowned educational center.

Reason (R) is incorrect because the **Gupta rulers were primarily followers of Hinduism**, not Buddhism. Although they tolerated and supported Buddhist institutions like Nalanda, their religious inclination was not the main reason for supporting Nalanda.

Thus, option (C) is correct.

107.(b)

All India Kisan Sabha was formed to address farmers' rights and grievances, becoming a prominent organization in the agrarian movement in India.

Formation Year of All India Kisan Sabha:

Swami Sahajanand Saraswati founded the **All India Kisan Sabha in 1936** to mobilize farmers for their rights, focusing on issues like land reforms, fair wages, and debt relief.

Thus, option (b) is correct.

108.(a)

Shishunaga Dynasty was one of the early dynasties to rule Magadha, a significant region in ancient India that later became a powerful empire under the Mauryan dynasty.

Correct Statements:

Statement 1: Shishunaga Dynasty indeed **succeeded the Haryanka Dynasty** in Magadha.

Statement 2 is incorrect as the capital was not shifted back to Vaishali; instead, the capital remained at Pataliputra during much of this period.

Thus, only statement 1 is correct.

109.(a)

Haryanka → Shishunaga → Nanda → Maurya
Ancient Bihar (Magadha region) saw successive dynasties rise to power, each contributing to the expansion and consolidation of the Magadhan empire.



Correct Sequence:

Haryanka Dynasty was the earliest, succeeded by the **Shishunaga Dynasty**.

Nanda Dynasty followed, known for its wealth and centralized administration.

Finally, the **Maurya Dynasty** rose to prominence, establishing a vast empire under Chandragupta Maurya.

110.(d)

After the assassination of Mahatma Gandhi in 1948

Context: Gandhi Maidan in Patna has been a significant venue for political gatherings and events, especially during the Indian independence movement. It was renamed to honor Mahatma Gandhi after his death.

Renaming of Patna Lawn:

Patna Lawn was renamed **Gandhi Maidan in 1948**, following the **assassination of Mahatma Gandhi**, as a tribute to his contributions and legacy in India's freedom struggle.

111.(b)

Vinod Chandra Pandey

After the bifurcation of Bihar to create the state of Jharkhand in 2000, the two states initially shared the same Governor.

Vinod Chandra Pandey served as the **last common Governor of Bihar and Jharkhand** until Jharkhand appointed its own Governor in 2002.

112.(a)

Mahadev Lal Sarraf

Salt Satyagraha was a significant part of the Civil Disobedience Movement in 1930, with various leaders taking the initiative across India to protest the British monopoly on salt.

Mahadev Lal Sarraf led the Salt Satyagraha in Bhagalpur, mobilizing people against British policies and advocating for self-reliance and resistance

113 (a)

Bihar, a state rich in cultural and religious heritage, is home to several significant temples and monuments, each with its unique historical

and spiritual importance.

Viraat Ramayan Mandir: Currently under construction in the East Champaran district, the Viraat Ramayan Mandir is poised to become the world's largest Hindu temple upon completion. Inspired by the architectural grandeur of Cambodia's Angkor Wat, this temple will stand 270 feet tall and cover an area of 3.76 lakh square feet. The temple complex will feature 12 domes, with the tallest reaching 270 feet, and will house 22 sanctum sanctorums dedicated to various deities. The construction commenced on June 20, 2023, and is expected to be completed by the end of 2025.

Janaki Janmasthan Mandir: Located in Puna Radham, Sitamarhi district, the Janaki Janmasthan Mandir is revered as the birthplace of Goddess Sita. According to legend, King Janak discovered infant Sita in a pot while plowing the fields during a severe famine. The temple complex includes the Janaki Kund, a sacred pond where devotees believe that bathing can bless them with progeny. Recognizing its cultural and religious significance, the Bihar government approved a development project for Puna Radham Janki Mandir in September 2023, allocating ₹72.47 crore for its enhancement.

Buddha Samyak Darshan Museum and Memorial Stupa: Situated in Vaishali district, the Buddha Samyak Darshan Museum and Memorial Stupa is a tribute to the rich Buddhist heritage of the region. Vaishali holds historical significance as the place where Lord Buddha delivered his last sermon and announced his impending Mahaparinirvana. The museum and stupa aim to preserve and showcase artifacts and teachings related to Buddhism, serving as a center for learning and reflection for devotees and scholars alike.

Lal Keshwar Shiv Mandir: Located in Hajipur, Vaishali district, the Lal Keshwar Shiv Mandir is a prominent temple dedicated to Lord Shiva. The temple is an important pilgrimage site, especially during festivals like Maha Shivaratri, attracting devotees from various regions. The architecture of the temple reflects traditional designs, and it holds a significant place in the local religious practices.



These sites collectively highlight Bihar's diverse religious landscape and its commitment to preserving and promoting its rich cultural heritage.

114.(a)

Bihar's first dry port and Inland Container Depot (ICD) was inaugurated in Bihta, near Patna, on October 21, 2024. This facility aims to enhance the state's logistics and export capabilities by providing warehousing, customs services, and multi-modal transport options. The ICD Bihta is strategically connected by rail to major ports such as Kolkata, Haldia, Visakhapatnam, and Mundra, facilitating efficient movement of goods. This development is expected to significantly boost Bihar's trade volumes and contribute to the state's economic growth.

115.(b)

According to the India State of Forest Report (ISFR) 2021, Bihar's forest cover is 7,381 square kilometers, constituting 7.84% of the state's total geographical area.

Forest Cover Classification:

Very Dense Forest (VDF): 145.30 sq km (0.15% of the state's area)

Moderately Dense Forest (MDF): 3,255.66 sq km (3.46%)

Open Forest (OF): 3,980.83 sq km (4.23%)

Tree Cover:

2,341 sq km, accounting for 2.49% of Bihar's geographical area.

Total Forest and Tree Cover:

9,721.79 sq km, which is 10.3% of the state's area.

District-wise Forest Cover:

Kaimur district has the largest forest cover at 1,051.56 sq km.

Changes Since ISFR 2019:

An increase of 75.79 sq km in forest cover.

Tree cover increased by 338 sq km, a 16.87% rise from the previous assessment.

Extent of Trees Outside Forests (TOF):

4,891 sq km.

These figures highlight Bihar's ongoing efforts to enhance its forest and tree cover, contributing

to environmental sustainability and biodiversity conservation.

116.(c)

Bhojpur region

The Bhojpur region in Bihar is often referred to as the "granary of Bihar" due to its high agricultural productivity. This region, encompassing districts such as Bhojpur, Buxar, Kaimur, and Rohtas, benefits from fertile alluvial plains and a favorable climate, making it ideal for cultivating crops like paddy and wheat. The abundance of these staple crops has earned the area this agricultural distinction.

117.(c)

Bihar Economic Survey' was first published for the financial year 2006-07, marking a significant step in the state's financial transparency.

Bihar Economic Survey 2023-24 provides a comprehensive analysis of the state's economic performance and development initiatives. Key highlights include:

Gross State Domestic Product (GSDP):

The nominal GSDP for 2023-24 is projected at ₹8.59 lakh crore, reflecting an 8.9% increase over the previous year.

Per Capita Income:

The per capita Net State Domestic Product (NSDP) at constant prices is estimated at ₹31,280 for 2022-23, marking a 9.1% growth from the previous year.

Sectoral Composition:

In 2022-23, the sectoral distribution of Gross State Value Added (GSVA) is as follows:

Primary Sector: 19.97%

Secondary Sector: 20.04%

Tertiary Sector: 59.98%

Fiscal Indicators:

The fiscal deficit for 2023-24 is targeted at 3% of GSDP (₹25,568 crore), aligning with the central government's prescribed limit.

The state's debt and other liabilities are projected to be ₹3,24,762 crore in 2023-24, constituting 37.81% of GSDP, a slight decrease from 38.66% in 2022-23.



Capital Expenditure:

Capital outlay for 2023-24 is proposed at ₹29,257 crore, a 26% decrease from the revised estimate of 2022-23.

Unemployment:

The unemployment rate in Bihar was 6% as per the Periodic Labour Force Survey (July 2021-June 2022), higher than the national average of 4.1%.

Development Initiatives:

The state plans to launch missions such as the Bihar Millet Mission, Bihar Pulses and Oilseeds Development Mission, and Crop Diversification Mission to boost agricultural productivity.

118.(c)**Pyrite**

Bihar holds a near-monopoly in India's pyrite production, possessing approximately 95% of the country's pyrite resources.

The primary deposits are located in the Rohtas district, particularly in the Amjhore area of the Sone Valley. These deposits are associated with the Vindhyan rock system and are significant for their high sulfur content, making them valuable for sulfuric acid production.

119.(d)**Gopalganj**

According to the 2011 Census, Gopalganj district in Bihar recorded the highest sex ratio in the state, with 1,021 females per 1,000 males

According to the 2011 Census of India, Bihar's demographic profile is as follows:

Population and Density:

Total Population: 104,099,452

Males: 54,278,157

Females: 49,821,295

Population Density: 1,106 persons per square kilometer, making Bihar the most densely populated state in India.

Sex Ratio:

Overall Sex Ratio: 918 females per 1,000 males.

Highest District Sex Ratio: Gopalganj district, with 1,015 females per 1,000 males.

Literacy Rate:

Overall Literacy Rate: 61.8%

Male Literacy: 71.2%

Female Literacy: 51.5%

Despite improvements, Bihar's literacy rate remains below the national average of 72.98%.

Urbanization:

Urban Population: Approximately 11.3% of the total population, indicating a predominantly rural demographic.

Religious Composition:

Hindus: 82.7%

Muslims: 16.9%

Other Religions: 0.4%

Age Distribution:

Nearly 58% of Bihar's population is below 25 years of age, highlighting a youthful demographic.

120.(d)**Gaya**

On September 8, 2023, Bihar Chief Minister Nitish Kumar laid the foundation stone for the Gaya Ji Dham Dharamshala in Gaya. This facility, set to be one of India's largest dharamshalas, will feature 1,080 beds and is estimated to cost ₹120 crore. The project aims to provide comfortable accommodations for pilgrims visiting the Vishnupad Temple and other sacred sites in Gaya.

121.(b)**Sarasai Sarovar, Hajipur**

167-foot-high statue of Lord Shiva is being constructed at Sarasai Sarovar in Hajipur, Bihar. This monumental project aims to enhance the region's cultural and spiritual significance, attracting devotees and tourists alike. Once completed, it is expected to be one of the tallest statues of Lord Shiva in India, symbolizing the rich heritage and devotion associated with the deity.

122.(c)**2400 MW**

The Pirpainti Thermal Power Project in Bhagalpur, Bihar, has been approved with a production capacity of 2,400 megawatts (MW). This coal-fired power plant is planned to consist



of three units, each generating 800 MW, totaling 2,400 MW. The project is a collaborative effort between the Bihar State Power Generation Company Limited (BSPGCL) and NHPC Limited, with an equity distribution of 26% and 74%, respectively. The estimated cost for establishing this power plant is approximately ₹21,400 crore. The Bihar government has already acquired 1,020.60 acres of land for the project, valued at around ₹2,000 crore. This initiative aims to enhance Bihar's energy security and meet the state's growing electricity demands.

123.(d)

- (a) Amrit Lal Meena has been appointed as the new Chief Secretary of Bihar: This statement is correct. Amrit Lal Meena, a 1989 batch IAS officer, was appointed as the Chief Secretary of Bihar in August 2024.
- (b) Alok Raj has been appointed as the DGP of Bihar: This statement is correct. Alok Raj, a 1989 batch IPS officer, was appointed as the Director General of Police (DGP) of Bihar in August 2024.
- (c) Justice Shyam Kishore Sharma is the current Chairman of Bihar Lokayukta: This statement is correct. Justice Shyam Kishore Sharma has been serving as the Chairman of Bihar Lokayukta since 2020
- (d) Ashutosh Kumar has been the current Chief Justice of High Court of Bihar: This statement is incorrect. As of November 2024, the Chief Justice of the Patna High Court is Justice K. Vinod Chandran. Justice Ashutosh Kumar is a sitting judge of the Patna High Court but not the Chief Justice.

124.(a)

Mukhyamantri Mahila Udyami Yojana is an initiative by the Bihar government aimed at promoting entrepreneurship among women in the state. Under this scheme, women entrepreneurs receive financial assistance totaling ₹10 lakh to establish their businesses. This assistance comprises a ₹5 lakh interest-free loan and a ₹5 lakh grant. The loan is repayable in 84 equal monthly installments, starting one year after the disbursement.

This scheme is part of the Bihar government's efforts to empower women by providing them with the necessary financial support to start and sustain their entrepreneurial ventures.

125.(d)

The Bihar Public Examinations (Prevention of Unfair Means) Act, 2024, was introduced by **Shri Vijay Kumar Chaudhary**, not Shri Samrat Chaudhary.

Regarding the investigation of offences under this Act, it is stipulated that the investigating officer shall be **not below the rank of Deputy Superintendent of Police (DSP)**, not an Inspector.

Therefore, both statements are incorrect.

Provisions of the Act

Cognisable and Non-Bailable Offences: All offences under this Act are classified as cognisable and non-bailable, allowing law enforcement to arrest without a warrant and denying bail as a matter of right.

Defined Offences: The Act specifies various malpractices, including:

- Question paper leaks
- Creation and use of fake websites
- Collusion with service providers

Penalties for Individuals: Individuals found guilty of such offences may face:

- Imprisonment ranging from three to five years
- Fines up to ₹10 lakh

Penalties for Service Providers: Service providers, whether governmental or private, involved in malpractices are subject to:

- Fines up to ₹1 crore
- A four-year ban on providing examination-related services

126.(b)

Let the person's total income be ₹X.
He spends **40%** on rent, **20%** on food, and **15%** on other expenses.

Total expenses as a percentage of income = **40% + 20% + 15% = 75%**.

Therefore, the person saves **100% - 75% = 25%** of his income.



Since **25% of X = ₹12,000**, we can set up the equation:

$$0.25X = 12000 \quad 0.25X = 12000 \quad 0.25X = 12000$$

Solving for X: $X = 12000 / 0.25 = 48000$

Correct Answer: (b) ₹48,000

127.(a)

Sister

Ravi's grandfather's only son is Ravi's father.

The daughter of Ravi's father is Ravi's sister.

Therefore, the girl in the photograph is Ravi's sister.

128.(b)

Given that the average salary of 5 employees is ₹24,000.

Total salary of 5 employees = Average salary × Number of employees:

$$\text{Total Salary of 5 Employees} = 24,000 \times 5 = 120,000$$

When a new employee joins, the **average salary decreases by ₹2,000**, so the new average salary becomes: $24,000 - 2,000 = 22,000$

Calculate the Total Salary of All 6 Employees with the New Average

With the new average of ₹22,000 for 6 employees, the total salary of all 6 employees is: Total Salary of 6 Employees = $22,000 \times 6 = 132,000$

The salary of the new employee is the difference between the total salary of 6 employees and the total salary of the original 5 employees:

$$\text{Salary of New Employee} = 132,000 - 120,000 = 12,000$$

129.(a)

5% profit

Determine the Cost Price (CP) of Each Item:

The man buys **two items** at ₹500 each.

Total Cost Price (CP) of both items: Total CP = $500 + 500 = 1000$

Calculate the Selling Price (SP) of Each Item:

First item sold at a **20% profit**:

Selling Price (SP) of the first item: SP of first item = $500 + (20\% \text{ of } 500) = 600$

Second item sold at a **10% loss**:

Selling Price (SP) of the second item: SP of second item = $500 - (10\% \text{ of } 500) = 450$

Total Selling Price (SP) of both items:

$$\text{Total SP} = 600 + 450 = 1050$$

Calculate the Overall Profit or Loss:

Profit or Loss = Total SP - Total CP

$$\text{Profit} = 1050 - 1000 = 50$$

Calculate the Overall Profit Percentage:

The overall profit percentage is calculated as:

$$\text{Overall Profit Percentage} = (\text{Profit} / \text{Total CP}) \times 100 = (50 / 1000) \times 100 = 5\%$$

Correct Answer: The man's overall profit percentage is **5%**.

130.(a)

10 years

Let the Principal (P) be the initial amount.

Given:

The sum doubles in **5 years** under compound interest.

Therefore, if the principal amount is **P**, then after **5 years**, it becomes **2P**.

Using Compound Interest Doubling Information:

Let the rate of compound interest be **R%** per annum.

According to compound interest, if an amount doubles in a certain period, then applying the same rate for an additional period of the same length will double it again.

Calculate the Time to Become Four Times the Principal:

Since the amount doubles in 5 years, it will double again in the next 5 years.

So, to become **four times the initial amount (4P)**, it will require two doubling periods, each of **5 years**.

Total time required = **5 years + 5 years = 10 years**.

Correct Answer: The sum will become four times itself in **10 years** at the same rate.



131.(a)

14 liters

Define Initial Quantities: Let the initial quantity of milk be $4x$ liters and the initial quantity of water be $3x$ liters (since the ratio of milk to water is given as 4:3).

Condition After Adding Water: According to the question, 7 liters of water is added to the mixture. This changes the amount of water to $3x + 7$ liters.

Set up the New Ratio: After adding water, the new ratio of milk to water becomes 4:5. Therefore, we can set up the equation:

$$\frac{4x}{3x + 7} = \frac{4}{5}$$

Cross Multiply to Simplify: Cross-multiplying gives:

$$4x \times 5 = 4 \times (3x + 7)$$

$$20x = 12x + 28$$

Solve for x: Subtract $12x$ from both sides:

$$8x = 28$$

Divide by 8:

$$x = 3.5$$

Find the Initial Quantity of Milk: Since the initial quantity of milk was $4x$, substitute $x = 3.5$ to find the initial quantity of milk:

$$4x = 4 \times 3.5 = 14 \text{ liters}$$

Therefore, the initial quantity of milk in the mixture was **14 liters**.

132.(a)

NHBERDUG

Each letter in "COMPUTER" is shifted **3 positions forward** to get "FRPSXWHU":

Apply the same shift to "KEYBOARD" "KEYBOARD" would be written as "NHBERDUG" in that code.

133.(a)

3 : 4

Solution:

1. **Understanding the Ratio of Areas:**

- Let the side lengths of the two squares be a and b .
- The area of a square is given by $\text{Area} = \text{side}^2$.
- Given that the **ratio of the areas** of the two squares is **9:16**, we can write:

$$\frac{a^2}{b^2} = \frac{9}{16}$$

2. **Finding the Ratio of Side Lengths:**

- Taking the square root of both sides to find the ratio of the side lengths:

$$\frac{a}{b} = \sqrt{\frac{9}{16}} = \frac{3}{4}$$

- Therefore, the ratio of the side lengths of the two squares is **3:4**.

3. **Calculating the Ratio of Perimeters:**

- The perimeter of a square is given by $\text{Perimeter} = 4 \times \text{side length}$.
- Therefore, the ratio of the perimeters of the two squares is:

$$\frac{4a}{4b} = \frac{a}{b} = \frac{3}{4}$$

Conclusion:

- **Correct Answer:** The ratio of the perimeters of the two squares is **3:4**.

134.(d)

5:00 PM

To determine when all five bells will toll together again, we need to find the Least Common Multiple (LCM) of their tolling intervals: 5, 10, 15, 20, and 25 minutes.

Prime factorization:

$$5 = 5$$

$$= 2 \times 5$$

$$15 = 3 \times 5$$

$$20 = 2^2 \times 5$$

$$25 = 5^2$$

LCM calculation: Take the highest powers of all prime factors:

$$2^2 = 4$$

$$3 = 3$$

$$5^2 = 25$$

LCM: $4 \times 3 \times 25 = 300$ minutes

Since 300 minutes equals 5 hours, the bells will toll together again 5 hours after 12:00 PM, which is at 5:00 PM.

135.(b)

10 days

1. **Calculate the work completed by P and Q to**

- **P's work rate:** P can complete the task in 12 days.
- **Q's work rate:** Q can complete the task in 15 days.
- **Combined work rate:** Together, P and Q can complete $\frac{7}{72}$ of the task per day.
- **Work done in 6 days:** In 6 days, they can complete $\frac{7}{12}$ of the task.

136.(b)

"Ayurveda Innovations for Global Health"

The theme of Ayurveda Day 2024 was "Ayurveda Innovations for Global Health". The Ministry of Ayush celebrated the 9th Ayurveda Day on October 29, 2024. The theme was chosen to highlight the potential of Ayurveda to contribute to the global health system through innovative practices.

The All India Institute of Ayurveda (AIIA) organized an e-poster making competition to raise awareness about Ayurveda. The competition invited participants to design posters that showcase Ayurveda's innovative approaches and contributions to modern healthcare.

Ayurveda Day is celebrated annually on Dhanwantari Jayanti, also known as Dhanteras. The celebration reflects India's commitment to



promoting Ayurveda as a part of India's traditional medicine system.

137.(c)**Mauritius**

On October 3, 2024, the UK and Mauritius announced a historic agreement to transfer sovereignty of the Chagos Archipelago to Mauritius. This decision aims to address past injustices and uphold international legal rulings. Under the agreement, the US military base on Diego Garcia will continue to operate under a new 99-year lease arrangement, ensuring its strategic functions remain intact.

The agreement also includes provisions for the resettlement of displaced Chagossians, allowing them to return to their homeland after decades of displacement. Additionally, the UK has committed to providing financial support to Mauritius and the Chagossian community to facilitate development and resettlement efforts.

This resolution marks a significant step in resolving a long-standing colonial dispute and reflects a commitment to rectifying historical wrongs while maintaining strategic security interests in the region.

138.(c)**Bangladesh**

India clinched the SAFF Under-17 Championship 2024 title by defeating Bangladesh 2-0 in the final. The match took place on September 30, 2024, at the Changlimithang Stadium in Thimphu, Bhutan. After a goalless first half, Mohammed Kaif opened the scoring with a header in the 58th minute, and Mohammed Arbash sealed the victory with a left-footed strike in stoppage time.

139.(d)**4-10 October**

World Space Week 2024 was observed from October 4 to October 10.

This annual event, declared by the United Nations, celebrates the contributions of space science and technology to human development. The 2024 theme was "Space & Climate Change," highlighting the role of space technology in understanding and addressing climate change

140.(c)**SIMBEX – India and Singapore**

KAZIND: A joint military exercise between India and Kazakhstan, focusing on counter-terrorism operations and enhancing interoperability between the two armies. The 8th edition, KAZIND-2024, was held from September 30 to October 13, 2024, in Auli, Uttarakhand, India.

DUSTLIK: A bilateral military exercise between India and Uzbekistan, aimed at sharing expertise in counter-terrorism and fostering military cooperation. The latest edition, DUSTLIK IV, took place in February 2024 in Pithoragarh, Uttarakhand, India.

SIMBEX: The Singapore-India Maritime Bilateral Exercise, conducted between the navies of India and Singapore, focuses on enhancing maritime cooperation and interoperability. The 30th edition of SIMBEX was held in October 2024 in the South China Sea.

SAMPRITI: A joint military exercise between India and Bangladesh, emphasizing counter-terrorism operations and strengthening bilateral defense ties. The 11th edition, SAMPRITI-XI, was conducted in July 2024 in Jashore, Bangladesh.

141.(d)**Ashish Khanna**

The seventh session of the ISA Assembly in progress in New Delhi selected Mr Ashish Khanna from the Republic of India as its third Director General. The outgoing Director General, Dr Ajay Mathur, wished his successor luck

The Director General of ISA plays a crucial role in supporting the Assembly in advancing the International Solar Alliance mandate. This includes supporting to Member Countries in addressing common challenges and engaging in coordinated action to scale up the deployment of solar energy globally.

142.(b)**Vijaya Kishore Rahatkar**

Smt. Vijaya Kishore Rahatkar has been appointed as the Chairperson of the National Commission for Women (NCW). She will be the 9th Chairperson of NCW.



Smt. Rahatkar has demonstrated leadership skills across various political and social responsibilities. During her tenure as Chairperson of the Maharashtra State Commission for Women (2016-2021), she spearheaded initiatives like “Sakshama” (support for acid attack survivors), “Prajwala” (linking self-help groups to central government schemes), and “Suhita” (24x7 helpline service for women).

143.(b)

How colonial mortality rates influenced economic institutions in former colonies

2024 Nobel Prize in Economic Sciences was awarded to Daron Acemoglu, Simon Johnson, and James A. Robinson for their research on how institutions are formed and affect prosperity. Their work demonstrated that inclusive political and economic systems lead to long-term prosperity, while extractive systems benefit those in power only in the short term.

Among the options provided, the most accurate is:

(b) How colonial mortality rates influenced economic institutions in former colonies

This reflects their analysis of how historical colonization practices, particularly the mortality rates of European settlers, influenced the development of institutions in colonies, which in turn affected their economic trajectories.

144.(b)

Radhika Sen

Major Radhika Sen of India was honoured with the prestigious 2023 United Nations Military Gender Advocate of the Year Award during a ceremony at the UN headquarters on the International Day of UN Peacekeepers. The award was presented by UN Secretary-General Antonio Guterres, who praised Major Sen as a true leader and role model, highlighting her service as a significant contribution to the United Nations.

Major Sen is the second Indian peacekeeper to receive this award, following Major Suman Gawani in 2019.

145.(b)**74**

In the 18th Lok Sabha, 74 women Members of Parliament (MPs) were elected, constituting approximately 13.6% of the total 543 seats.

This marks a slight decrease from the 17th Lok Sabha, where 78 women MPs were elected, accounting for about 14.4% of the House.

Over the years, women's representation in the Lok Sabha has gradually increased. In the first Lok Sabha (1952-1957), women comprised about 5% of the members. This proportion has risen over time, reaching 14% in the 17th Lok Sabha and slightly decreasing to 13.6% in the 18th Lok Sabha.

Despite this progress, women's representation in India's lower house remains lower compared to several other countries. For instance, as of recent data, women constitute 46% of the parliament in South Africa, 35% in the United Kingdom, and 29% in the United States.

146.(c)

Qatar

The name 'Dana' for the recent cyclone in the Bay of Bengal was contributed by Qatar. In Arabic, 'Dana' translates to 'generosity'.

Severe Cyclonic Storm Dana made landfall on the Odisha coast on the night of October 24. The storm made landfall at a speed of 100 to 110 kmph gusting at 120 kmph.

Cyclones that develop in the regions between the Tropics of Capricorn and Cancer are called tropical cyclones.

World Meteorological Organisation uses the term 'Tropical Cyclone' to cover weather systems in which winds exceed 'Gale Force' (minimum of 34 knots or 63 kph).

Tropical cyclones are the progeny of ocean and atmosphere, powered by the heat from the sea; and driven by easterly trades and temperate westerlies, high planetary winds and their own fierce energy.

Worldwide, there are **six regional specialised meteorological centres** (RSMCs) and **five regional Tropical Cyclone Warning Centres** (TCWCs) mandated for issuing advisories and naming of tropical cyclones.

The five regional Tropical Cyclone Warning Centres (TCWCs) are:

ESCAP/WMO Typhoon Committee,



WMO/ESCAP Panel on Tropical Cyclones (It is responsible for naming of cyclones in the Indian Ocean.)

RA I Tropical Cyclone Committee,

RA IV Hurricane Committee,

RA V Tropical Cyclone Committee.

IMD is one of the six RSMCs to provide tropical cyclone and storm surge advisories to under the **WMO/Economic and Social Commission for Asia-Pacific (ESCAP)**.

WMO/ ESCAP is an inter-governmental regional body jointly established by the World Meteorological Organization (WMO) and the United Nations Economic and Social Commission for Asia-Pacific (ESCAP) in 1972.

147.(b)

Carlos Alcaraz and Alexander Zverev

Carlos Alcaraz defeated Alexander Zverev in the final, 6–3, 2–6, 5–7, 6–1, 6–2 to win the men's singles tennis title at the 2024 French Open. It was his first French Open title and third major title overall.^[1]

At 21 years old, Alcaraz became the youngest male player to win major titles on three different surfaces, having won the 2022 US Open on hardcourts and 2023 Wimbledon Championships on grass.^{[2][3]} Zverev became the first German man to reach the final since Michael Stich in 1996.

Novak Djokovic was the defending champion, but withdrew from the quarterfinals due to a knee injury.

148.(b)

The BRICS Games 2024 concluded in Kazan, Russia, not in South Africa. Therefore, statement 1 in the question is incorrect.

India won a total of 29 medals, including 3 gold, 6 silver, and 20 bronze. This makes statement 2 correct.

Some additional informations are as follows:-

Russia led the medal standings with 343 medals (173 gold, 101 silver, and 69 bronze).

Belarus followed with 32 gold, 56 silver, and 68 bronze, while China secured 17 gold, 17 silver, and 12 bronze.

149.(a)

Nepal government has announced provide free cancer treatment to children under 14 in designated public hospitals. This initiative is effective from November 16 and aims to ease the financial burden on parents. Treatment can be accessed at Kanti Children Hospital, Bhaktapur Cancer Hospital, and BP Koirala Memorial Cancer Hospital. If government funds are insufficient, the Ministry will arrange additional funding from internal sources. In 2022, Nepal reported 22,000 new cancer patients, with cancer causing 11% of deaths, and around 1,500 children are diagnosed with cancer each year.

150.(c)

Defence Minister Rajnath Singh visited Tawang in Arunachal Pradesh on October 31, 2024. He inaugurated the Museum of Valour dedicated to Major Ralengnao Bob Khathing and unveiled a statue of Sardar Vallabhbhai Patel. Rajnath Singh celebrated Deepavali with soldiers stationed at the India-China border. Manipur Chief Minister N. Biren Singh joined the event, welcomed by Arunachal CM Pema Khandu. Major Khathing is honored for leading the 1951 expedition to establish Indian administration in Tawang. Sardar Patel's role in integrating princely states is also commemorated. This visit underscores India's commitment to securing its borders amidst LAC breakthroughs with China

