



Your Personal Exams Guide



NDA



CDS



SSC CGL



CBSE UGC NET



IAS



SSC CHSL



CTET



MPSC



AFCAT



CSIR UDC NET



IBPS PO



UP POLICE



SSC MTS



SBI PO



BPSC



UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

BPSC 45th 2002 Prelims General Studies Question Paper (21-Apr-2002)

Total Time: 2 Hour

Total Marks: 150

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks
1	Full Test	150	150

- 1.) A total of 120 minutes is allotted for the examination.
- 2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.
- 3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

Your Personal Exams Guide

Full Test

1. 'Kumarsambhava', an epic poem was composed by (+1)

- a. Banabhatta
- b. Chandra Bardai
- c. Harisen
- d. Kalidas

2. Kautilya's Arthashastra deals with the aspects of (+1)

- a. Economic life
- b. Political policies
- c. Religious life
- d. Social life

3. Gautam Buddha was elevated to the position of God by the time of (+1)

- a. Ashoka
- b. Kanishka
- c. Chandragupta Vikramaditya
- d. Harsha

4. Which of the following dynasties succeeded Shungas? (+1)

- a. Satvahanas
 - b. Kushanas
 - c. Kanvas
 - d. Guptas
-

5. Which one of the following leaders belonged to the Extremist wing of the Congress? (+1)

- a. Aurobindo Ghosh
 - b. Dadabhai Naoroji
 - c. GK Gokhale
 - d. SN Banerjee
-

6. Which one of the following dynasties ruled over India after the invasion of Timur? (+1)

- a. Lodi dynasty
 - b. Sayyid dynasty
 - c. Tughlaq dynasty
 - d. Khilji dynasty
-

7. Which of the following Sultans had greatest number of slaves in his court? (+1)

- a. Balban
- b. Alauddin Khilji

- c. Mohammad Bin Tughlaq
 - d. Feroz Shah Tughlaq
-

8. Which one of the following sultans provided employment to the unemployed? **(+1)**

- a. Alauddin Khilji
 - b. Mohammad Bin Tughlaq
 - c. Feroz Shah Tughlaq
 - d. Sher Shah Suri
-

9. Which one of the following Mughal Emperors gave an important 'Farman' to the English for facilitating their trade in India? **(+1)**

- a. Bahadur Shah I
 - b. Farrukhsiyar
 - c. Shah Alam II
 - d. Bahadur Shah II
-

10. Mahavira Jain breathed his last at **(+1)**

- a. Rajgir
- b. Ranchi
- c. Pawapuri
- d. Samastipur

11. A Buddhist Council during the reign of Ashoka was held at (+1)

- a. Magadh
- b. Pataliputra
- c. Samastipur
- d. Rajgir

12. Mahabodhi Temple has been built at Bodh Gaya where (+1)

- a. Gautam Buddha was born
- b. Gautam Buddha received enlightenment
- c. Gautam Buddha gave his first sermon
- d. Gautam Buddha passed away

13. Kunwar Singh held the revolt of 1857 in (+1)

- a. Punjab
- b. Bengal
- c. Bihar
- d. Maharashtra

14. Mundas raised revolt in (+1)

- a. 1885

- b. 1888
 - c. 1899
 - d. 1895
-

15. Who was the first Portuguese viceroy in India? (+1)

- a. Diaz
 - b. Vasco-di-Gama
 - c. Almeida
 - d. Albuquerque
-

16. Who was appointed Deputy Diwan of Murshidabad by Robert Clive after the Allahabad Treaty? (+1)

- a. Mohd. Raza Khan
 - b. Shitab Rai
 - c. Rai Durlabh
 - d. Syed Ghulam Hussain
-

17. Which one of the following commissions is associated with the Army Re-organisation after the suppression of the Revolt of 1857? (+1)

- a. Public Service Commission
- b. Peel Commission

- c. Hunter Commission
 - d. Simon Commission
-

18. Kuka Movement was organised by (+1)

- a. Guru Ram Das
 - b. Guru Nanak
 - c. Guru Ram Singh
 - d. Guru Gobind Singh
-

19. Who was the founder of the India Association? (+1)

- a. Dadabhai Naoroji
 - b. Bal Gangadhar Tilak
 - c. AO Hume
 - d. Surendra Nath Banerjee
-

20. By whom was General Dyer shot dead? (+1)

- a. Khudiram
 - b. Bhagat Singh
 - c. Madan Lal Dhingra
 - d. Udham Singh
-

21. Quit India Movement was led by (+1)

- a. BR Ambedkar
 - b. Jawaharlal Nehru
 - c. Mahatma Gandhi
 - d. None of these
-

22. The slogan 'Do or Die' was given by (+1)

- a. PC Roy
 - b. JC Bose
 - c. CV Raman
 - d. Mahatma Gandhi
-

23. The second session of the Indian National Congress was presided over by (+1)

- a. Ganesh Agarkar
 - b. Surendra Nath Banerjee
 - c. Dadabhai Naoroji
 - d. Feroz Shah Mehta
-

24. The Partition of Bengal came into effect to (+1)

- a. 15th August, 1905

b. 15th September, 1905

c. 16th October, 1905

d. 15th November, 1905

25. Who among the following was not known as a moderate in the National Movement? (+1)

a. Bal Gangadhar Tilak

b. Dadabhai Naoroji

c. MG Ranade

d. Gopal Krishna Gokhale

26. Where was Azad Hind Fauz set up? (+1)

a. Japan

b. Burma

c. Singapore

d. England

27. Bhagat Singh, Rajguru and Sukhdev were hanged on (+1)

a. March 23, 1931

b. March 23, 1932

c. March 23, 1933

d. March 23, 1934

28. Cabinet Mission was presided over by (+1)

- a. Lord Attlee
 - b. Strafford Cripps
 - c. Clement Attlee
 - d. Sir P Lawrence
-

29. Who gave the 'Inquilab Zindabad' slogan? (+1)

- a. Iqbal
 - b. MK Gandhi
 - c. Bhagat Singh
 - d. SC Bose
-

30. Where was Shri Yogender Shukla brought on the 7th December, 1942? (+1)

- a. Ranchi
 - b. Munger
 - c. Muzaffarpur
 - d. Bhagalpur
-

31. Which of the following newspapers used to be published from Patna? (+1)

- a. Indian Nation
 - b. Punjab Kesari
 - c. Prabhakar
 - d. Don
-

32. Jagat Narayan Lal was sent to (+1)

- a. Bankipur Jail
 - b. Camp Jail
 - c. Bhagalpur Jail
 - d. Hazaribagh Jail
-

33. Jai Prakash Narayan belonged to which party? (+1)

- a. Congress
 - b. Kissan Sabha
 - c. Socialist
 - d. Raivadi
-

34. Ram Chander Sharma belonged to the village (+1)

- a. Gogri
- b. Indrapur

- c. Pema
 - d. Amhara
-

35. Shri Narsingh Narayan was (+1)

- a. Socialist
 - b. Nationalist
 - c. Internationalist
 - d. Communist
-

36. The Revolt of 1857 was witnessed by the poet (+1)

- a. Mir Taqi Mir
 - b. Zauq
 - c. Ghalib
 - d. Iqbal
-

37. Who of the following was the bitterest enemy of the British during the Revolt of 1857? (+1)

- a. Maulvi Ahmadullah Shah
- b. Maulvi Imdadullah
- c. Maulana Faiz-ul-Haq Khairabadi
- d. Nawab Liaquat Ali

38. In Indian Polity, which one is Supreme? (+1)

- a. The Supreme Court
 - b. The Constitution
 - c. The Parliament
 - d. Religion
-

39. Who is the executive head of the State Government? (+1)

- a. The Chief Minister
 - b. The Governor
 - c. The Secretary to the Chief Minister
 - d. The Chief Secretary
-

40. Who advised State Government on legal matters? (+1)

- a. Attorney General
 - b. Advocate General
 - c. Solicitor General
 - d. Chief Justice of the High Court
-

41. In Indian Polity, the executive is subordinate to the (+1)

- a. Judiciary

- b. Legislature
 - c. Election Commission
 - d. Union Public Service Commission
-

42. Zero hour in political jagron referes to (+1)

- a. day when no business in Parliament is done
 - b. suspended motion
 - c. adjourned time
 - d. question-answer session
-

43. By what term, the ten commands of 42nd Constitutional Amendment are called? (+1)

- a. Fundamental Rights
 - b. Fundamental Duties
 - c. Panchayati Raj Principles
 - d. Directive Principles of State Policy
-

44. Panchayati Raj System in India is laid down under (+1)

- a. Fundamental Rights
- b. Fundamental Duties
- c. Directive Principles of State Policy

d. All of the above

45. Which article of the Constitution of India gives precedence to Constitutional provisions over the laws made by the Union Parliament/State Legislatures? (+1)

- a. 13
 - b. 32
 - c. 245
 - d. 326
-

46. Who is the Chairman of Rajya Sabha? (+1)

- a. The President
 - b. The Vice-President
 - c. The Prime Minister
 - d. The Speaker
-

47. What is the minimum age laid down for a person to seek election to the Lok Sabha? (+1)

- a. 18 years
 - b. 21 years
 - c. 25 years
 - d. None of these
-

48. Main objective of IRDP is (+1)

- a. Export Promotion
- b. Sound Fiscal Management
- c. Banking Reforms
- d. Rural Development and Poverty Alleviation

49. Relative Poverty refers to (+1)

- a. bankruptcy
- b. trade cycles
- c. minimum needs of life
- d. economic inequalities

50. National income estimates in India are compiled by (+1)

- a. Planning Commission
- b. RBI
- c. Central Statistical Organisation
- d. Indian Statistical Institute

51. Which important industry is located at Muri? (+1)

- a. Aluminium manufacturing

- b. Copper manufacturing
 - c. Steel manufacturing
 - d. Chemical Fertilizers
-

52. Maithon, Belpahari and Tilaiya dams are constructed on the river (+1)

- a. Damodar
 - b. Barakar
 - c. Konar
 - d. Bokaro
-

53. Triveni canal receives water from river (+1)

- a. Sone
 - b. Kosi
 - c. Gandak
 - d. Mayurakshi
-

54. Which of the Indian States having the maximum population density? (+1)

- a. Delhi
- b. West Bengal
- c. Kerala

d. Uttar Pradesh

55. Which is the maximum wheat producing state of India? (+1)

- a. Uttar Pradesh
 - b. Punjab
 - c. Haryana
 - d. Madhya Pradesh
-

56. Lakshadweep consists of how many Islands? (+1)

- a. 17
 - b. 27
 - c. 36
 - d. 47
-

57. One of the highest falls in Asia, 'Hundru' is situated near (+1)

- a. Ranchi
 - b. Hazaribagh
 - c. Jamshedpur
 - d. Bodh Gaya
-

58. Which is the best suited crop for dryland? (+1)

- a. Sugarcane
 - b. Jute
 - c. Wheat
 - d. Groundnut
-

59. Approximately how much distance per minute the Earth is rotating? (+1)

- a. 27.8 km
 - b. 59 km
 - c. 69 km
 - d. None of these
-

60. Highest peaks of the world are mostly found in which type of mountains? (+1)

- a. Old folded mountains
 - b. Young folded mountains
 - c. Residual mountains
 - d. Block mountains
-

61. Which new state was recently carved out of Bihar? (+1)

- a. Vananchal
- b. Vidharbha

- c. Jharkhand
 - d. Chhattisgarh
-

62. After the formation of Jharkhand, how many districts were left with Bihar? (+1)
(Nearest figure)

- a. 37
 - b. 65
 - c. 60
 - d. 62
-

63. The principal foodgrain crops of Bihar (+1)

- a. rice, wheat and maize
 - b. sugarcane, tea and barley
 - c. groundnut, coffee and wheat
 - d. None of the above
-

64. Which of the following is true? (+1)

- a. Bihar has been the leading producer of coal and mica
- b. Bihar was separated from Orissa in 1911
- c. Bihar shares its border with Orissa after the formation of Jharkhand State
- d. Bihar's legislature is unicameral

65. Which city of Bihar became the capital of the Jharkhand State? (+1)

- a. Buxer
- b. Dhanbad
- c. Ranchi
- d. Hazaribagh

66. The word 'Bihar' originally means (+1)

- a. Buddhist Monastery
- b. Land of Angels
- c. Arya Pradesh
- d. Land of Greenery

67. The total length of National Highways in Bihar is (+1)

- a. 6155 km
- b. 1088 km
- c. 1313 km
- d. 1371 km

68. What is the percentage of Bihar's population in the total Indian population? (+1)

- a. 9.33%

- b. 10.21%
 - c. 16.44%
 - d. 8.04%
-

69. Jamshedpur is located on the bank of which river? (+1)

- a. Damodar
 - b. Brahmani
 - c. Subarnarekha
 - d. Ajay
-

70. Name the most important iron ore producing district of Jharkhand. (+1)

- a. Daltanganj
 - b. Hazaribagh
 - c. Dhanbad
 - d. Singhbhum
-

71. Who among the following is the common Governor of Bihar and Jharkhand? (+1)

- a. Vinod Kumar Pandey
- b. Vimal Kumar Dubey
- c. Vishnu Kant Shastri

d. Girish Chaubey

72. The outstanding liability of the State of Bihar is (+1)

- a. 37653 crore
 - b. 67653 crore
 - c. 87663 crore
 - d. 90000 crore
-

73. Who is Bihar State Election Commissioner? (+1)

- a. ML Majumdar
 - b. Renuka Bajaj
 - c. LM Singhvi
 - d. None of these
-

74. Which of the following districts of Bihar transferred some of its areas to West Bengal? (+1)

- a. Jamshedpur
 - b. Bhagalpur and Samastipur
 - c. Purnea and Manbhum
 - d. Rajgir
-

75. Which of the following places is famous for its wildlife in Bihar? (+1)

- a. Bhagalpur
 - b. Bodh Gaya
 - c. Patna
 - d. Hazaribagh
-

76. Three-tier system of Panchayati Raj consists of (+1)

- a. Gram Panchayat, Panchayat Samiti, Block Samiti
 - b. Gram Panchayat, Block Samiti, Zila Parishad
 - c. Block Samiti, Zila Parishad, Panchayat Samiti
 - d. Gram Panchayat, Panchayat Samiti, Zila Parishad
-

77. 73rd Constitutional Amendment relates to (+1)

- a. Impeachment of the President
 - b. Appointment of Election Commissioner
 - c. Reservation of seats in Educational Institutions
 - d. Panchayati Raj System
-

78. Which two of the following taxes are indirect taxes? (+1)

- a. Sales tax and Income tax

- b. Income tax and Wealth tax
 - c. Sales tax and Excise duty
 - d. Income tax and Excise duty
-

79. Devaluation of Rupee was last time on (+1)

- a. July, 1991
 - b. July, 1993
 - c. July, 1997
 - d. July, 2001
-

80. Agriculture sector directly employs how many percentage of labour force in India? (+1)

- a. 20%
 - b. 30%
 - c. 40%
 - d. 65%
-

81. 9th Five Year Plan in India covers the period of (+1)

- a. 1992-1997
- b. 1997-2002
- c. 1990-1995

d. None of these

82. Which sector of Indian Economy has shown remarkable expansion during the last decade? **(+1)**

- a. Primary Sector
 - b. Secondary Sector
 - c. Tertiary Sector
 - d. Mining Sector
-

83. Per capita income of a country is derived to **(+1)**

- a. population
 - b. national income
 - c. national income and population both
 - d. None of the above
-

84. At present India's largest trading partner is **(+1)**

- a. Russia
 - b. Britain
 - c. Australia
 - d. USA
-

85. Which of the following payment instruments introduced by the banks is known as Plastic money? (+1)

- a. Bearer cheques
 - b. Credit cards
 - c. Demand drafts
 - d. Gift cheques
-

86. The dispute relating to the Babri Masjid/Ramjanambhoomi before the Allahabad High Court (Lucknow Bench) is in the nature of a (+1)

- a. Writ Petition
 - b. Title Suit
 - c. Claim for Compensation
 - d. Judicial Review Petition
-

87. The first President of Independent India hails from (+1)

- a. UP
 - b. Andhra Pradesh
 - c. Bihar
 - d. Tamil Nadu
-

88. Name of the First Private University of India (+1)

- a. IGNOU
 - b. JNU
 - c. Sikkim Manipal University
 - d. Aligarh Muslim University
-

89. Who, among the following is elected to the Rajya Sabha from the Bihar? (+1)

- a. Sunil Dutt
 - b. Rabri Devi
 - c. Sahib Singh Verma
 - d. None of these
-

90. Who is the US Envoy appointed to ease tension in West Asia? (+1)

- a. Anthony Zinni
 - b. Louis Fischer
 - c. Kissinger
 - d. Tom Lavis
-

91. In total, there are how many National Highways in India and approximately what is their total length? (+1)

- a. 34 and 16000 km
- b. 44 and 24000 km

- c. 54 and 32000 km
 - d. 87 and 151,000 km
-

92. How much is the difference between Indian Standard Time (IST) and Greenwich Mean Time (GMT)? (+1)

- a. $+4\frac{1}{2}h$
 - b. $+5\frac{1}{2}h$
 - c. $-5\frac{1}{2}h$
 - d. $-4\frac{1}{2}h$
-

93. What is the percentage of forest area in total geographical area of India? (+1)

- a. 20.7%
 - b. 21.7%
 - c. 24.6%
 - d. 23.7%
-

94. The Bhakra-Nangal Dam is constructed over which river? (+1)

- a. Ravi
- b. Indus
- c. Chenab
- d. Sutlej

95. Assam is surrounded by how many States and Union Territories? (+1)

- a. 6
- b. 7
- c. 8
- d. 9

96. Who invented aeroplane? (+1)

- a. Wright Brothers
- b. James Watt
- c. Humphrey Davy
- d. Von Braun

97. How many pairs of nerves arise from the spinal cord? (+1)

- a. 13
- b. 31
- c. 33
- d. 12

98. Where is the governing centre of reflex action located? (+1)

- a. In cerebrum

- b. In cerebellum
 - c. In spinal cord
 - d. In nerve cells
-

99. An element X has four electrons in its outermost orbit. What will be the formula of its compounds with hydrogen? (+1)

- a. X_4H
 - b. X_4H_4
 - c. XH_3
 - d. XH_4
-

100. What is the shape of sulphur hexafluoride molecule? (+1)

- a. Trigonal pyramid
 - b. Octahedral
 - c. Planar
 - d. Tetrahedral
-

101. Which scientist discovered telescope? (+1)

- a. Newton
- b. James Watt
- c. Rutherford

d. Galileo

102. Which hormone stimulates the thyroid gland to secrete thyroxine? (+1)

- a. TSH
 - b. FSH
 - c. LTH
 - d. ACTH
-

103. Where does fertilisation occur? (+1)

- a. In uterus
 - b. In oviduct
 - c. In ovary
 - d. In vagina
-

104. Which physical quantity is represented by the ratio of momentum and velocity of the body? (+1)

- a. Velocity
 - b. Acceleration
 - c. Mass
 - d. Force
-

105. Force is the product of (+1)

- a. mass and velocity
 - b. mass and acceleration
 - c. weight and velocity
 - d. weight and acceleration
-

106. Which of the following quantities is not a vector? (+1)

- a. Displacement
 - b. Velocity
 - c. Force
 - d. Volume
-

107. A distance of 1 km means (+1)

- a. 100 m
 - b. 1000 cm
 - c. 1000 m
 - d. 100 cm
-

108. What is the correct equation for finding the acceleration? (+1)

- a. $a = \frac{v-u}{t}$

b. $a = u + vt$

c. $a = \frac{v+u}{t}$

d. $a = \frac{v+u}{2}$

109. Which of the following is the electronic configuration of a metallic element? (+1)

a. 2, 8

b. 2, 8, 7

c. 2, 8, 8

d. 2, 8, 8, 2

110. What is the usual property of oxides of Group III and IV? (+1)

a. Basic and Acidic (i.e., Amphoteric)

b. Basic

c. Acidic

d. Neutral

111. Which of the following carries a negative charge? (+1)

a. X-rays

b. Alpha particles

c. Beta particles

d. Gamma rays

112. What is the mass number of an element, the atom of which contains two protons, two neutrons and two electrons? (+1)

a. 2

b. 4

c. 6

d. 8

113. What is the distance between two successive crests or successive troughs called? (+1)

a. Amplitude

b. Wavelength

c. Frequency

d. None of the above

114. Who accords recognition to various political parties in India as National or Regional Parties? (+1)

a. The Parliament

b. The President

c. The Election Commission

d. The Supreme Court

115. Which one of the following is a Fundamental Duty in Indian Constitution? **(+1)**

- a. Separation of judiciary from executive
- b. To value and preserve the rich heritage of our composite culture
- c. Free and compulsory education for children
- d. All of the above

116. Who got the 1998 Nobel Prize in Economics? **(+1)**

- a. Solow
- b. Marshall
- c. Amartya Sen
- d. Paul Samuelson

117. The Liberhan Commission of enquiry is related to **(+1)**

- a. Demolition of Babri Masjid
- b. Construction of Ram Temple
- c. Hawala Scam
- d. Bihar Fodder Scam

118. Capital of Rajasthan is **(+1)**

- a. Jaipur

- b. Udaipur
 - c. Jodhpur
 - d. Ajmer
-

119. Capital of Gujarat is (+1)

- a. Godhra
 - b. Baroda
 - c. Gandhi Nagar
 - d. Ahmedabad
-

120. The native African tribe 'Pygmies' are found in which of the following river basins? (+1)

- a. Niger
 - b. Congo
 - c. Nile
 - d. Zambezi
-

121. Which country of the world is the largest producer and exporter of soft timber and wood pulp? (+1)

- a. USA
- b. Norway

- c. Sweden
 - d. Canada
-

122. Anita Roddick is the author of (+1)

- a. The Untold Story
 - b. Business as Usual
 - c. Business as Unusual
 - d. Tears and Smiles
-

123. When is Samajik Adhikarita Smriti Divas celebrated? (+1)

- a. March, 18
 - b. March, 19
 - c. March, 20
 - d. March, 21
-

124. World Consumers Rights Day is celebrated on (+1)

- a. March, 13
 - b. March, 14
 - c. March, 15
 - d. March, 16
-

125. Chief Minister of which of the following States has launched the Annadanam Scheme at 63 selected temples? (+1)

- a. Kerala
 - b. Andhra Pradesh
 - c. Karnataka
 - d. Tamil Nadu
-

126. The biggest US ground operation in Afghanistan is known as (+1)

- a. Operation Anaconda
 - b. Operation Osama Bin Laden
 - c. Operation United States
 - d. Operation Blue Star
-

127. Identify the number of wards in the Patna Municipal Corporation (+1)

- a. 57
 - b. 72
 - c. 64
 - d. 59
-

128. Olympics for the disabled is known as (+1)

- a. Simpilympics
 - b. Combilympics
 - c. Andilympics
 - d. Abilympics
-

129. What is the name of Japan's Crown princess? (+1)

- a. Toko
 - b. Tono
 - c. Aiko
 - d. Piko
-

130. Who among the following is convicted by the Supreme Court for contempt of Court in March 2002? (+1)

- a. Shabana Azmi
 - b. Arundhati Roy
 - c. Arun Jaitley
 - d. Keshavananda Bharti
-

131. Who is the Air Chief Marshal of India? (+1)

- a. S. Krishnaswamy
- b. Krishna Kant

- c. Vishnu Kant
 - d. Rama Reddy
-

132. What is the name of the new superfast train between New Delhi and Patna introduced with effect from February 2, 2002? **(+1)**

- a. Sabarmati Express
 - b. Sampoorna Kranti Express
 - c. Patliputra Express
 - d. Shalimar Express
-

133. Which of the following actors has been conferred the honorary degree (Honoris causa) by the Aligarh Muslim University in February, 2002? **(+1)**

- a. Amitabh Bachchan
 - b. Amir Khan
 - c. Shatrughan Sinha
 - d. Dilip Kumar
-

134. Which of the following countries is hosting the new ICC Champions Trophy in September, 2002? **(+1)**

- a. Sri Lanka
- b. Pakistan
- c. India

d. West Indies

135. Which of the following films is awarded the Oscar 2002, in the category of Best Foreign Language Film? **(+1)**

- a. Lagaan
 - b. No Man's Land
 - c. A Beautiful Mind
 - d. The Lord of the Rings
-

136. CHOGM-2002 with 51 members was held at **(+1)**

- a. Coolum
 - b. Copenhagen
 - c. Harare
 - d. Dublin
-

137. Who represented India at the Second SAARC Information Ministers' Conference in Islamabad in March, 2002? **(+1)**

- a. Murli Manohar Joshi
 - b. Uma Bharti
 - c. Sushma Swaraj
 - d. Mamta Banerjee
-

138. The Chairman of the Constitutional Review Commission set up in February, 2000 is (+1)

- a. M N Venkatachaliah
 - b. RS Sarkaria
 - c. Krishna Iyer
 - d. Fatima Bibi
-

139. Who is elected for the fourth consecutive term as General Secretary of the CPI (M) at the 17th Party Congress at Hyderabad in March, 2002? (+1)

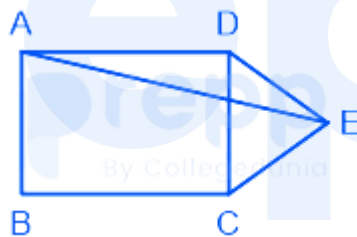
- a. Chandrababu Naidu
 - b. Harkishan Singh Surjeet
 - c. Khushwant Singh
 - d. Mamta Banerjee
-

140. Who is the Chairman of the National Human Rights Commission? (+1)

- a. Arun Kumar Mishra
 - b. P N Bhagwati
 - c. Ahmadi
 - d. H L Dattu
-

141. The price of a commodity increased by 5% from 1995 to 1996, 8% from 1996 to 1997 and 77% from 1997 to 1998. Then, the average price increase from 1995 to 1998 is (+1)
- 24%
 - 32%
 - 26%
 - 33.5%

142. In the figure given below, ABCD is a square and DEC is an equilateral triangle. The points A and E are joined by a straight line. (+1)



Then, $\angle DAE$ equals

- 15°
 - 10°
 - 30°
 - 20°
143. $\lim_{x \rightarrow 0} \frac{xe^x - \log(1+x)}{x^2}$ equals (+1)
- $\frac{1}{2}$
 - $\frac{3}{2}$

c. 0

d. $\frac{5}{2}$

144. The series $\sum \frac{n^2-1}{n^2+1}x^2, x > 0$ is (+1)

a. convergent for $x \geq 1$

b. convergent for $x > 1$

c. divergent for $x \geq 1$

d. divergent of $x > 1$

145. Which statement among the following is correct? (+1)

a. If $x < 0$, then $x^2 > x$

b. If $x^2 > 0$, then $x > 0$

c. If $x^2 > x$, then $x < 0$

d. If $x^2 > x$, then $x > 0$

146. A car driver travels from plane to hill station which are 200 km apart at an average speed of 40 km/h. In the return trip, he covers the same distance at an average speed of 20 km/h. Then, the average speed of the car over the entire distance of 40 km is (+1)

a. 25 km/h

b. 30 km/h

c. 24.33 km/h

d. 26.67 km/h

147. Let $f(x) = ax^7 + bx^3 + cx - 5$, where a , b and c are constants. If $f(-7) = 7$, then $f(7)$ equals (+1)

a. -17

b. -7

c. 14

d. 17

148. Let the function $f(x)$ defined as $f(x) = \frac{x-|x|}{x}$, then (+1)

a. the function is continuous everywhere

b. the function is not continuous

c. the function is continuous when $x < 0$

d. the function is continuous for all x except zero

149. For the curve $x^2y^2 = a^2(x^2 + y^2)$, the asymptotes parallel to the coordinates axes are (+1)

a. $x = \pm a, y = 0$

b. $x = \pm a, y = \pm a$

c. $x = a, y = 0$

d. $x = -a, y = -a$

150. For the curve $f(x) = x^3$, $x = 0$ is

(+1)

- a. the global minimum point
- b. the local minimum point
- c. an extreme point
- d. a point of inflexion

Prepp

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Answers

1. Answer: d

Explanation:

Kumarsambhava: Author Identification

This question asks to identify the author of the famous Sanskrit epic poem titled 'Kumarsambhava'. Understanding the prominent poets of classical India is key to answering questions about ancient Indian literature.

About the Epic Poem 'Kumarsambhava'

'Kumarsambhava' is a significant epic poem in Sanskrit literature. It narrates the story of the birth of Kartikeya (also known as Kumara), the son of the deities Lord Shiva and Goddess Parvati. The poem is celebrated for its beautiful descriptions and poetic excellence.

Composer of 'Kumarsambhava': Kalidas

The esteemed Sanskrit poet and playwright, **Kalidas**, is credited with composing the epic poem 'Kumarsambhava'. **Kalidas** lived during the Gupta period and is widely considered one of the greatest poets in the history of Sanskrit literature. His works, including plays like 'Abhijnanashakuntalam' and poems like 'Meghadūta', are known for their lyrical quality and profound themes. 'Kumarsambhava' is one of his major poetic works.

Analysis of Potential Authors

To confirm the correct author, let's consider the contributions of the other poets mentioned in the options:

- **Banabhatta**: A renowned writer of the 7th century, known for Sanskrit prose works such as 'Kadambari' and 'Harshacharita'.

- **Chandra Bardai:** A poet of the 12th century, famous for composing the epic 'Prithviraj Raso', a historical poem about the Rajput king Prithviraj Chauhan.
- **Harisen:** Known for composing the Allahabad Pillar inscription, which praises Emperor Samudragupta. He was a court poet during the Gupta era.

Comparing the works and periods, it is clear that **Kalidas** is the author of 'Kumarsambhava'.

2. Answer: b

Explanation:

The correct answer is Political policies.

★ Key Points

- Kautilya's Arthashastra deals with Political policies.
- Kautilya is also known by the name **Chanakya** and he was the Prime Minister of Chandragupta Maurya.
- He was also an academician at the famous **Taxila University**.
- Arthashastra was written in the **Sanskrit** language and was the compilation of 15 chapters on statecraft.

3. Answer: b

Explanation:

Gautam Buddha's Elevation to Godhood: Historical Context

The question asks about the historical period when Gautam Buddha began to be regarded as a divine figure, essentially elevated to the status of a god. This

transformation reflects the evolution within Buddhism itself, particularly the development of Mahayana Buddhism.

Evolution of Buddha Worship

In the early stages of Buddhism, Gautam Buddha was primarily revered as an enlightened teacher and the founder of the religion. His teachings focused on achieving enlightenment (Nirvana) through personal effort and understanding the Four Noble Truths and the Eightfold Path. However, over centuries, especially with the rise of Mahayana Buddhism around the 1st century CE, the perception of Buddha evolved significantly. Mahayana Buddhism introduced concepts like the **Bodhisattva** ideal and the idea of Buddha as a transcendent, cosmic being, accessible through devotion. This shift contributed to Buddha being viewed more as a divine entity.

Analysis of Key Historical Figures and Periods

Let's examine the influence of the rulers mentioned in the options:

- **Ashoka (Mauryan Empire, c. 268–232 BCE):** Emperor Ashoka was a pivotal figure in promoting Buddhism. He actively supported the monastic community and encouraged the spread of Buddhist teachings. However, his era primarily represented the flourishing of what would later be known as Theravada Buddhism, which focused more on Buddha as a guide rather than a deity. The concept of Buddha's deification was not widespread during his reign.
- **Kanishka (Kushan Empire, c. 127–151 CE):** Kanishka's reign is widely considered a crucial period for the development and popularization of Mahayana Buddhism. Mahayana doctrines, which included the veneration of Buddha as a divine saviour and the concept of multiple Buddhas and Bodhisattvas residing in celestial realms, gained significant traction during this time. The magnificent Gandhara art, flourishing under the Kushans, began depicting Buddha with divine attributes, further contributing to his deification. Therefore, Kanishka's patronage coincided with the significant elevation of Buddha to a divine status.
- **Chandragupta Vikramaditya (Gupta Empire, c. 380–415 CE):** The Gupta period was a golden age for arts, literature, and various religious traditions, including Hinduism and Buddhism. While Mahayana Buddhism continued to thrive and

evolve, with rich philosophical and artistic expressions, the process of Buddha's deification had already been underway for centuries prior to this period.

- **Harsha (Vardhana Dynasty, 606–647 CE):** By the time of King Harsha, Buddhism had already undergone significant transformations. Buddha was widely worshipped as a divine figure across various Buddhist schools. Harsha himself was known for his religious tolerance but ruled long after the initial stages of Buddha's deification.

Conclusion on Buddha's Deification Timeline

Based on the historical development of Buddhist thought and practice, the elevation of Gautam Buddha to the position of a god, particularly within the Mahayana tradition, gained significant momentum and recognition during the Kushan Empire. The patronage of Emperor Kanishka played a crucial role in fostering the environment where Mahayana Buddhism, with its emphasis on Buddha's divine nature, flourished.

4. Answer: c

Explanation:

The Shunga Dynasty and its Historical Context

The Shunga Empire, also known as the Shunga Empire, was an ancient Indian dynasty that ruled over a significant part of the Indian subcontinent from around 187 to 75 BCE. Founded by Pushyamitra Shunga, who overthrew the last ruler of the Mauryan Empire, the Shungas played a crucial role in the political and cultural landscape of India. Understanding which dynasty followed them is key to grasping the sequence of power in ancient India.

Identifying the Dynasty That Succeeded Shungas

The historical records indicate that the Shunga dynasty faced internal decline and external pressures. The immediate successor to the Shunga Empire was the Kanva

dynasty. The Kanvas, who were originally vassals or ministers under the later Shungas, eventually seized power. Vasudeva Kanva, the founder of the Kanva dynasty, is credited with overthrowing the last Shunga king, Devabhuti, and establishing his own rule around 75 BCE.

Historical Timeline of Post-Shunga Dynasties

Dynasty	Approximate Period of Rule	Relationship to Shungas
Shunga Dynasty	c. 187 – 75 BCE	Founded after Mauryan decline
Kanva Dynasty	c. 75 – 30 BCE	Directly succeeded Shungas
Satavahana Dynasty	c. 230 BCE – 220 CE	Overthrew Kanvas in many regions; contemporaneous with later Shungas/Kanvas
Kushana Empire	c. 1st – 3rd Century CE	Prominent in North-West India; ruled parallel to later Kanvas/Satavahanas and succeeding empires
Gupta Empire	c. 320 – 550 CE	Ruled centuries after the Shunga and Kanva dynasties

Analyzing Other Options

- **Satvahanas:** The Satavahana dynasty was a powerful force in the Deccan region. They eventually rose to prominence and succeeded the Kanva dynasty in many areas after the Kanvas' decline. However, they were not the immediate successors to the Shungas across the entire Shunga territory.
- **Kushanas:** The Kushana Empire was a significant Central Asian empire that also extended its influence into parts of North India. While they were contemporaries or followed the Kanvas in certain regions, they did not directly succeed the Shungas as the primary ruling power in the core Shunga heartland.

- **Guptas:** The Gupta Empire represents a much later period in Indian history, flourishing centuries after the fall of both the Shunga and Kanva dynasties.

Based on the historical succession, the Kanva dynasty directly took over from the Shungas, marking the end of the Shunga rule and the beginning of Kanva governance.

5. Answer: a

Explanation:

Understanding Extremist Leaders in the Congress

The Indian National Congress experienced a significant ideological rift during its early years, eventually splitting into two primary groups: the Moderates and the Extremists. This division was based on fundamental disagreements regarding the pace and methods of the struggle for self-rule.

Identifying the Extremist Faction

The Extremist wing of the Congress emerged advocating for more assertive and direct action, contrasting with the Moderates' reliance on constitutional and gradual methods. Key demands of the Extremists included Swaraj (self-rule), Swadeshi (promoting indigenous goods), Boycott of foreign goods, and National Education.

Analysis of Leaders' Affiliations

Let's examine the affiliations of the leaders mentioned:

- **Aurobindo Ghosh:** A prominent intellectual and nationalist, Aurobindo Ghosh was a key proponent of the Extremist viewpoint. He advocated for complete independence and actively promoted the Swadeshi movement and passive resistance as methods to achieve it.

- **Dadabhai Naoroji:** Revered as the "Grand Old Man of India," Dadabhai Naoroji was a leading Moderate leader. His approach focused on constitutional agitation and highlighting the economic drain of India by the British.
- **GK Gokhale:** Gopal Krishna Gokhale was a highly respected Moderate leader and a social reformer. He founded the Servants of India Society and believed in achieving political reforms through persuasion and constitutional means within the British framework.
- **SN Banerjee:** Surendranath Banerjee, often referred to as a political heir to Surendranath Banerjee, was a significant figure in the early nationalist movement. He is generally associated with the Moderate faction, favouring constitutional agitation and gradual political progress.

Conclusion on Congress Ideology

Considering the distinct political approaches and objectives, **Aurobindo Ghosh** clearly represented the ideology and methods characteristic of the Extremist wing within the Indian National Congress.

6. Answer: b

Explanation:

The correct answer is the Sayyid dynasty.

★ Key Points

- **Sayyid dynasty**
 - The **Sayyid dynasty** ruled over India after the invasion of Timur.
 - Taimur invaded India during the reign of **Nasir-ud-din Mahmud Shah Tughlaq** of the Tughlaq dynasty in **1398 AD**.
 - The Sayyid dynasty was founded by **Khizir Khan**, who was the governor of Multan and Timur's deputy in India.
 - **Ala-ud-din Shah** was the last ruler of this dynasty.

★ Additional Information

- **Lodi dynasty**
 - It was the **fifth and last dynasty of the Delhi Sultanate**.
 - The Lodi dynasty ruled from **1451 AD – 1526 AD**.
 - The **founder** of the Lodi dynasty was **Bahlul Lodhi**.
 - This was an Afghan dynasty and was also known as the **Pashtun dynasty**.
 - **Ibrahim Lodhi was the last ruler** of this dynasty and was killed by the Babur's troops in the battle of Panipat.
- **Tughlaq dynasty**
 - This was the Muslim dynasty of Indo-Turkic origin, ruled in India from **1320 AD – 1414 AD**.
 - The Tughlaq dynasty was founded by **Ghiyas-ud-din Tughlaq**.
 - He ascended to the throne by killing Mubarak Khilji, the last ruler of the Khilji dynasty.
 - **Nasir-ud-din Muhammad Tughlaq was the last ruler** of this dynasty.
- **Khilji dynasty**
 - It was the **second ruling dynasty of the Delhi Sultanate**.
 - It was established by **Jalaluddin Firuz Khilji** by overthrowing the Slave dynasty.
 - Khilji dynasty ruled for around **30 years, 1290 AD – 1320 AD**.
 - **Alauddin Khilji** was the most powerful ruler of this dynasty who led many successful military campaigns.

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7. Answer: d

Explanation:

Exploring Sultanate Slave Administration: Feroz Shah Tughlaq's Large Slave Force

The question asks us to identify which Sultan among the given options maintained the largest number of slaves in his court and administration. Understanding the role and scale of slave employment provides insight into the administrative practices of

the Delhi Sultanate. Let's examine the Sultans mentioned: Balban, Alauddin Khilji, Mohammad Bin Tughlaq, and Feroz Shah Tughlaq.

Feroz Shah Tughlaq's Slave Policy

Feroz Shah Tughlaq (reigned 1351–1388) is particularly noted in historical records for establishing and significantly expanding a dedicated slave department known as the 'Diwan-i-Bandagan'. This department was solely responsible for recruiting, training, and managing slaves for various state duties.

- Feroz Shah Tughlaq believed in using slaves extensively for administrative and military roles.
- He took great care in their recruitment, ensuring they were trained in different skills, including craftsmanship, administration, and warfare.
- Historical accounts suggest that the number of slaves under his command grew substantially, reaching figures estimated to be as high as 180,000 or even more during his reign.
- These slaves were not merely personal attendants but formed a significant part of the state machinery, receiving salaries and land assignments.

His focus on building a large cadre of slaves for state service distinguished him from other rulers.

Comparison with Other Sultans

While other Sultans also employed slaves, their scale and systematic organization were different:

- **Balban** (reigned 1266–1287): Known for consolidating power and establishing a strong monarchy, Balban did maintain slaves, but his administration wasn't primarily characterized by a massive slave bureaucracy in the way Feroz Shah Tughlaq's was.
- **Alauddin Khilji** (reigned 1296–1316): He focused on administrative reforms, market control, and military expansion. While he had a strong army, the emphasis wasn't on an exceptionally large number of slaves as the core of his administration.

- **Mohammad Bin Tughlaq** (reigned 1325–1351): Known for his ambitious projects and administrative experiments, he did employ slaves, but Feroz Shah Tughlaq's establishment of the 'Diwan-i-Bandagan' represents a far greater emphasis and scale in slave management.

Conclusion on Slave Numbers

Based on historical evidence, **Feroz Shah Tughlaq** stands out for implementing a policy that resulted in the greatest number of slaves being employed within the Sultan's court and administration, through the dedicated 'Diwan-i-Bandagan'.

8. Answer: c

Explanation:

Sultan Providing Employment to the Unemployed

Understanding the administrative policies of the Delhi Sultanate era reveals significant efforts by various rulers towards public welfare and economic stability. A key aspect of this was addressing unemployment and ensuring citizens had means of sustenance. This solution delves into the specific measures taken by the sultans mentioned in the options concerning the provision of employment.

Analyzing Sultan's Employment Policies

The question asks to identify the sultan who specifically focused on providing employment to the unemployed. Let's examine the contributions of each mentioned ruler:

1. Alauddin Khilji's Economic Measures

- **Alauddin Khilji** was renowned for his market control policies and price regulation.

- He maintained a large standing army and implemented strict administrative measures to ensure the smooth functioning of the state and economy.
- While his policies aimed at economic stability, the primary focus wasn't explicitly on creating a state-sponsored system to employ the general *unemployed* population in the way some later rulers did.

2. Mohammad Bin Tughlaq's Reforms and Employment

- **Mohammad Bin Tughlaq** undertook several ambitious and experimental reforms, including administrative and currency changes.
- His reign saw significant state activities, but these were often marked by administrative challenges and fiscal strain, which sometimes led to instability rather than focused employment generation for the masses.
- There isn't strong historical evidence pointing to a specific department or policy under him dedicated solely to employing the *unemployed* as a primary welfare objective.

3. Feroz Shah Tughlaq's Welfare Initiatives

- **Feroz Shah Tughlaq** is particularly noted for his focus on public works and welfare measures.
- He established the **Diwan-i-Istehaq** (Department of Employment), which was tasked with providing stipends and financial assistance to the poor and *unemployed*. This department aimed to systematically help those seeking work or financial support.
- He also founded numerous charitable hospitals (Dar-ul-Shafa) and vocational centers, which indirectly created employment and provided opportunities for learning skills.
- His extensive building projects, including mosques, hospitals, canals, and cities, also generated considerable employment opportunities.

4. Sher Shah Suri's Public Works and Employment

- **Sher Shah Suri** was a capable administrator known for strengthening the empire's infrastructure.

- His notable contributions include the construction of the Grand Trunk Road, sarais (inns), and other public buildings.
- These projects certainly provided employment, but the establishment of a dedicated institution specifically for the *unemployed*, like the Diwan-i-Istehaq, is not as prominently associated with his rule as it is with Feroz Shah Tughlaq.

Conclusion on Sultan Providing Employment

Based on historical accounts, **Feroz Shah Tughlaq** stands out for his specific institutional approach to addressing unemployment. The creation of the Diwan-i-Istehaq demonstrates a deliberate policy aimed at providing financial support and potentially employment avenues for the *unemployed* sections of society, making him the sultan most recognized for this particular welfare measure among the choices provided.

9. Answer: b

Explanation:

Mughal Emperor Farrukhsiyar's Grant for English Trade Facilitation

The question asks to identify the specific Mughal Emperor who issued a significant 'Farman' (an imperial edict or order) that greatly facilitated the trade activities of the English East India Company in India. This historical decree played a crucial role in the company's expansion and influence during the 18th century.

Understanding the Historical Context of Trade Permits

European trading companies, including the English East India Company, sought various concessions from Indian rulers, particularly the Mughals, to establish and expand their commercial operations. These concessions often included rights to

trade freely or at reduced customs duties, establish factories, and mint coins. A key development in this regard was the granting of a comprehensive trade 'Farman'.

The Pivotal Farman of 1717

The Mughal Emperor most associated with granting a landmark 'Farman' to the English East India Company was **Farrukhsiyar**. In 1717, during his reign, a delegation from the English East India Company, led by John Surman, visited the Mughal court. They successfully obtained a series of concessions through an imperial 'Farman'. This 'Farman' is often considered a turning point for the company's trade in India.

Key provisions of the 1717 Farman issued by Farrukhsiyar included:

- The company was allowed to continue its trade in Bengal, Bihar, and Orissa in return for an annual payment of just **Rs. 3,000**.
- In return for a yearly payment of **Rs. 10,000**, the company secured duty-free trade privileges throughout the Mughal Empire.
- The company gained the right to use its own seals for authorizing trade.
- Permission was granted to rent additional villages around Calcutta, strengthening their territorial control.
- Similar concessions were granted for trade in Surat and other regions.

This comprehensive set of trade privileges significantly boosted the English East India Company's commercial power and laid the groundwork for their future political dominance. It is sometimes referred to as the 'Magna Carta' of the English East India Company's trade.

Analysis of Other Options

Let's briefly consider why the other options are not the correct answer:

- **Bahadur Shah I** (reigned 1707-1712): While he was an emperor during the early 18th century, the significant trade concessions mentioned were granted later.
- **Shah Alam II** (reigned 1759-1806): He is historically known for events like the Battle of Buxar (1764) and granting the Diwani rights of Bengal, Bihar, and Orissa to the English, which was a political grant, not the specific trade-focused 'Farman' in question.

- **Bahadur Shah II** (reigned 1837–1857): He was the last Mughal emperor and ruled long after the English East India Company had established significant control over trade and territory. He did not grant such a pivotal trade 'Farman'.

Conclusion on the Trade Farman

Based on historical records, the Mughal Emperor **Farrukhsiyar** is the ruler who granted the crucial 'Farman' in 1717, which provided substantial benefits and facilitated the trade operations of the English East India Company across various parts of India, thereby enhancing their economic and political standing.

10. Answer: c

Explanation:

Mahavira Jain's Final Location: Understanding Pawapuri

Lord Mahavira, the 24th Tirthankara and the last spiritual teacher in Jainism, is a pivotal figure in the religion's history. A key aspect of his life story, often asked in historical and religious studies, is the location where he attained *Nirvana* (liberation from the cycle of birth and death), commonly referred to as breathing his last.

Historical Significance of Mahavira's Death

The final moments and passing of Lord Mahavira are significant events commemorated by Jains worldwide. Understanding the place associated with his *Nirvana* helps in appreciating the geography of Jain pilgrimage sites.

Analyzing the Options for Mahavira's Final Resting Place

Let's examine the provided options to determine the correct location:

- **Rajgir**: While Rajgir (formerly Rajagriha) is historically important and associated with both Lord Buddha and Lord Mahavira, serving as a site where Mahavira

delivered sermons, it is not the place of his death.

- **Ranchi:** Ranchi is the capital of Jharkhand, India. While it has Jain temples and historical connections to the region, it is not recognized as the location where Mahavira passed away.
- **Pawapuri:** Pawapuri (also known as Pava or Pawa) is a significant pilgrimage site for Jains. Historical and religious texts confirm that Lord Mahavira attained *Nirvana* here around 527 BCE after shedding his physical body. It is considered one of the holiest places in Jainism.
- **Samastipur:** Samastipur is a district in Bihar, India. While it lies in a region significant to Jain history, it is not the specific location associated with Mahavira's final moments.

Conclusion: Mahavira's Nirvana at Pawapuri

Based on established historical and religious accounts, **Pawapuri** is the sacred site where Lord Mahavira breathed his last and attained *Nirvana*. This location remains a major pilgrimage destination for followers of Jainism, attracting devotees from all over the world to pay homage.

11. Answer: b

Explanation:

Understanding the Buddhist Council During Ashoka's Reign

The question asks about the location of a significant Buddhist Council that took place during the rule of Emperor Ashoka. Emperor Ashoka, a prominent ruler of the Mauryan Empire, played a crucial role in the spread and organization of Buddhism. Several Buddhist Councils were held historically to discuss, codify, and preserve the teachings of the Buddha.

Third Buddhist Council Location

The Buddhist Council held during the reign of Emperor Ashoka is historically recognized as the **Third Buddhist Council**. This important council convened around 250 BCE in **Pataliputra**.

- **Patronage:** The council was presided over and patronized by Emperor Ashoka himself.
- **Presiding Monk:** The Venerable Moggaliputta Tissa is credited with presiding over this council.
- **Purpose:** A primary objective of this council was to address disturbances within the Buddhist monastic community (Sangha) and to purify it. It also focused on compiling and debating the Buddhist scriptures, particularly the Abhidhamma Pitaka.
- **Outcome:** The council affirmed the orthodox teachings and condemned the heresies. It also led to the dispatch of Buddhist missionaries to various regions, including Sri Lanka, furthering the reach of Buddhism.

Significance of Pataliputra as Venue

Pataliputra, known today as Patna, held immense importance during the Mauryan period. It served as the capital city of the Mauryan Empire and was the center of political, administrative, and cultural activities. Holding the Third Buddhist Council in Pataliputra underscored the council's significance and the Emperor's active involvement in religious affairs. Its status as the imperial capital made it a suitable and accessible location for such a major religious gathering.

Analysis of Other Options

Let's consider why the other options are not the specific location for the council during Ashoka's reign:

- **Magadh:** Magadh was the ancient kingdom and the larger geographical region where Pataliputra was situated. While Pataliputra was located within Magadh, Magadh itself is a broader region, not the specific site of the council.

- **Rajgir:** Rajgir (ancient Rajagriha) was the location of the **First Buddhist Council**, which was held shortly after the Buddha's Mahaparinirvana, during the reign of King Ajatashatru.
- **Samastipur:** Samastipur is a city in Bihar, but it is not historically associated with hosting any of the major early Buddhist Councils, especially not the one during Ashoka's reign.

Therefore, Pataliputra stands out as the correct site for the Buddhist Council convened under Emperor Ashoka's patronage.

12. Answer: b

Explanation:

Mahabodhi Temple Location Significance

The question focuses on the Mahabodhi Temple and its location in Bodh Gaya. We need to determine which significant event in the life of Gautam Buddha occurred at this specific place.

Key Life Events of Gautam Buddha

Understanding the major milestones in Gautam Buddha's journey is crucial to identifying the importance of Bodh Gaya:

- **Birthplace:** Gautam Buddha was born in Lumbini, which is located in modern-day Nepal.
- **Place of Enlightenment:** The site where Gautam Buddha attained enlightenment is Bodh Gaya.
- **First Sermon:** His first teaching, known as the Dhamma Cakka Pavattana, was delivered in Sarnath, Uttar Pradesh, India.
- **Place of Passing Away:** Gautam Buddha's final moments and attainment of Mahaparinirvana occurred in Kushinagar, Uttar Pradesh, India.

Bodh Gaya and the Mahabodhi Temple

The Mahabodhi Temple is a renowned Buddhist temple in Bodh Gaya. Its significance stems directly from the events that took place there. Let's analyze the options in relation to Bodh Gaya:

- **Option 1: Gautam Buddha was born** – This is incorrect. Buddha was born in Lumbini.
- **Option 2: Gautam Buddha received enlightenment** – This is correct. Bodh Gaya is the sacred place where, under the Bodhi tree, Siddhartha Gautama achieved enlightenment and became known as the Buddha. The Mahabodhi Temple was constructed to commemorate this pivotal moment.
- **Option 3: Gautam Buddha gave his first sermon** – This is incorrect. The first sermon was given in Sarnath.
- **Option 4: Gautam Buddha passed away** – This is incorrect. The Mahaparinirvana occurred in Kushinagar.

Conclusion on Mahabodhi Temple's Site

Therefore, the Mahabodhi Temple was built at Bodh Gaya because it is the sacred site where **Gautam Buddha received enlightenment**. This event marks the foundation of Buddhism, making Bodh Gaya a central pilgrimage destination.

The correct option is the one stating that Gautam Buddha received enlightenment at Bodh Gaya.

13. Answer: c

Explanation:

Kunwar Singh and the 1857 Revolt

The Indian Mutiny of 1857, also known as the First War of Indian Independence, saw numerous prominent leaders rise against British rule. **Kunwar Singh** was one such

significant figure who played a crucial role in this widespread uprising.

Kunwar Singh's Leadership in Bihar

Kunwar Singh, a local chieftain and zamindar from Jagdishpur in the Arrah district, was a key leader of the revolt in the region of **Bihar**. He joined the rebellion around the age of 80, demonstrating remarkable courage and military skill.

- **Kunwar Singh's Base:** His ancestral home in Jagdishpur, Bihar, became a strategic center for the rebels in the province.
- **Military Actions:** He actively led his forces against British troops in various encounters across Bihar, particularly around Arrah. His successful resistance put considerable pressure on the British administration in the area.
- **Significance:** Kunwar Singh's involvement was vital in mobilizing the local population and the sepoys stationed in Bihar, making it one of the important centers of the 1857 revolt.

His military campaigns extended beyond Bihar, but his primary leadership and influence were concentrated in this eastern Indian state during the **revolt of 1857**.

14. Answer: c

Explanation:

Mundas Revolt Historical Context

The Mundas are a significant tribal community primarily residing in the Chota Nagpur Plateau region of India. They initiated a notable uprising against the injustices and oppressive policies they faced during the British colonial era.

- **The Uprising:** This major tribal revolt is famously known as the 'Ulgulan', meaning the 'Great Tumult'.
- **Key Leader:** The movement was powerfully led by Birsa Munda, who is revered as a folk hero and a freedom fighter. He galvanized the Munda people against the prevailing exploitation.

- **Primary Period:** The Ulgulan, the movement spearheaded by Birsa Munda, significantly intensified and took place mainly between **1899** and 1900. This period marked the height of their organized resistance.

Understanding the Causes of the Mundas Revolt

The Mundas revolted due to a combination of socio-economic and political grievances:

- **Loss of Traditional Land Rights:** The British administration and the influx of non-tribal landlords (Dikus) undermined the Munda's communal land ownership system known as the 'Khuntkatti' system.
- **Economic Exploitation:** The tribal people were burdened with forced labour (veth bigari), heavy taxes, and increased rents, leading to widespread economic distress.
- **Restrictions on Forest Resources:** Traditional rights to access and use forest resources were severely restricted by forest laws, impacting their traditional livelihoods.
- **Cultural and Religious Disruption:** There were perceived threats to their cultural identity and religious practices due to the influence of external forces and missionary activities.

Significance of 1899 in the Ulgulan

The year **1899** marks a critical phase of the Mundas revolt, known as the Ulgulan. It was during this time that Birsa Munda mobilized his community for a large-scale confrontation against the oppressive forces. The rebellion, though ultimately suppressed by the British, highlighted the deep-seated grievances of the tribal communities and led to some reforms later, including the Chotanagpur Tenancy Act of 1908, which provided some protection to tribal land rights.

15. Answer: c

Explanation:

First Portuguese Viceroy in India

The establishment of Portuguese influence in India began with maritime exploration and the subsequent need for governance over trade routes and territories. Following the landmark voyage of **Vasco da Gama** to India in 1498, the Portuguese Crown sought to formalize its administration and secure its commercial interests in the East. This led to the creation of the position of Viceroy to represent the King in the newly acquired overseas domains.

Francisco de Almeida: The Inaugural Viceroy

Francisco de Almeida is recognized in history as the **first Portuguese viceroy** in India. He was appointed by King Manuel I and arrived in India in 1505, serving until 1509. Almeida's primary objective was to establish Portuguese dominance over the Indian Ocean trade, particularly the lucrative spice trade. He focused on strategic military actions and building fortifications to secure Portuguese influence and control against rival traders and local powers.

Key Figures in Portuguese Expansion

Understanding the roles of key figures helps clarify Almeida's position:

- **Vasco da Gama:** He was the initial explorer who discovered the sea route to India. While highly significant, he was not the first viceroy.
- **Francisco de Almeida:** Appointed in 1505, he was the **first** official representative of the Portuguese Crown with the title of Viceroy in India.
- **Afonso de Albuquerque:** He succeeded Almeida and is often credited with significantly expanding Portuguese power, notably through the conquest of Goa. However, he was the second governor/viceroy, not the first.
- **Diaz:** Bartholomew Diaz was an earlier explorer who rounded the Cape of Good Hope, paving the way for Gama's voyage, but he had no role as a viceroy in India.

Therefore, Francisco de Almeida was the first individual appointed to lead the Portuguese administration in India as its viceroy, making him the correct answer to the question about the **first Portuguese viceroy in India**.

16. Answer: a

Explanation:

Understanding Robert Clive's Appointments Post-Allahabad Treaty

The question asks about a specific administrative appointment made by **Robert Clive** following a significant historical event. Let's break down the context and the appointment.

The Significance of the Allahabad Treaty

The **Treaty of Allahabad**, signed in 1765, marked a major turning point in the British East India Company's influence in India. After the Battle of Buxar (1764), the Mughal Emperor Shah Alam II granted the *Diwani* (the right to collect revenue) of Bengal, Bihar, and Orissa to the British East India Company. **Robert Clive**, who was the Governor of Bengal at the time, played a crucial role in establishing the Company's administrative framework based on this treaty. This led to the implementation of a dual system of government in Bengal.

Appointment of Deputy Diwan

Under the dual system, the responsibilities were divided. The Company controlled the revenue collection and military affairs, while the Nawab remained the head of the civil administration but had little actual power. To manage the vast revenue collection and civil administration in the province of Bengal, **Robert Clive** made key appointments:

- **Mohd. Raza Khan** was appointed as the *Naib Nazim* (Deputy Subahdar) of Bengal. In this capacity, he effectively managed the revenue collection (Diwani) and civil administration of Bengal, acting as the chief executive official under the nominal Nawab. He was essentially the **Deputy Diwan** for Bengal, with his headquarters in Murshidabad, the then capital.

- Raja Shitab Rai was appointed as the Deputy Diwan of Bihar, managing revenue collection in that province.
- Rai Durlabh was an earlier figure who had served the Nawab of Bengal but was not the primary appointee for the Deputy Diwan role after the Treaty of Allahabad in the same capacity as Mohd. Raza Khan.
- Syed Ghulam Hussain Khan was a historian and writer, known for his work 'Siyar-ul-Mutakherin', but not appointed as Deputy Diwan.

Therefore, **Mohd. Raza Khan** was the key figure appointed by **Robert Clive** to handle the crucial responsibilities of revenue collection and civil administration in Bengal (Murshidabad) following the **Allahabad Treaty**.

17. Answer: b

Explanation:

Understanding Army Re-organisation After the 1857 Revolt

The Revolt of 1857, also known as the Indian Mutiny, was a significant turning point in the history of British rule in India. One of the immediate consequences was a complete overhaul of the British Indian Army's structure and composition to prevent future uprisings. To address this critical need, a commission was appointed to recommend changes to the army.

The Role of the Peel Commission

Following the suppression of the 1857 Revolt, the British government established the Royal Commission on the Indian Army in 1858. This commission is famously known as the **Peel Commission**, named after its chairman, Jonathan Peel (brother of Prime Minister Robert Peel). The primary objective of the Peel Commission was to examine the causes of the Mutiny within the army and propose reforms to ensure the army's loyalty and efficiency in maintaining British control.

The Peel Commission's report, submitted in 1859, led to drastic changes in the Army Re-organisation. Key recommendations and outcomes included:

- A significant increase in the number of British soldiers in India relative to Indian soldiers. The ratio was fixed at 1:2 for the Bengal Army and 1:3 for the Madras and Bombay Armies.
- Segregation of artillery units, which were largely placed under British control.
- Recruitment policies shifted to favour certain 'martial races' and recruitment was diversified geographically to prevent a united uprising.
- Introduction of the 'divide and rule' policy within the army, preventing soldiers from common backgrounds from forming large cohesive units.
- Strengthening of the European component of the army and placing key positions in British hands.

Why Other Options Are Not Correct

- **Public Service Commission:** This commission is related to the civil services and recruitment for administrative posts, not military re-organisation after 1857.
- **Hunter Commission:** This commission (established in 1882) was primarily concerned with education in India.
- **Simon Commission:** This commission (established in 1927) was related to constitutional reforms in British India.

Therefore, the commission directly associated with the Army Re-organisation after the suppression of the Revolt of 1857 is the Peel Commission.

Revision Table: Commissions in British India

Commission	Year Established	Primary Focus	Associated Event/Context
Peel Commission	1858	Army Re-organisation	After Revolt of 1857
Hunter Commission	1882	Education	Review of progress since 1854 Despatch
Simon Commission	1927	Constitutional Reforms	Review of Government of India Act 1919
Public Service Commission (Context varies, but general idea)	Late 19th/Early 20th Century onwards	Civil Service Recruitment/Structure	Administrative reforms

Additional Information: Impact of Peel Commission Reforms

The reforms implemented based on the Peel Commission's recommendations had a long-lasting impact on the British Indian Army. They created an army designed primarily for internal security and suppression of dissent, rather than large-scale warfare. The emphasis on British officers in command positions and the strategic placement of British troops in key locations ensured that the army remained a loyal instrument of colonial power. The policy of recruiting from specific groups and maintaining internal divisions within the ranks continued for decades, shaping the social and ethnic composition of the army.

18. Answer: c

Explanation:

Understanding the Kuka Movement

The question asks about the organiser of the Kuka Movement. The Kuka Movement was a significant religious and political movement that emerged in the Punjab region during the mid-19th century. It initially started as a religious revivalist movement within Sikhism but later developed a strong political dimension, opposing British rule.

Origins and Objectives of the Kuka Movement

The Kuka Movement, also known as the Namdhari movement, was founded on principles of purity, simplicity, and religious discipline. Key aspects included:

- Promoting vegetarianism and abstinence from alcohol and drugs.
- Opposing caste distinctions.
- Advocating for women's rights, including widow remarriage.
- Using simple, devotional practices.

Over time, the movement became increasingly vocal against the British government's policies in Punjab, particularly those perceived as interfering with religious practices and traditional life.

Who Organised the Kuka Movement?

The Kuka Movement was primarily organised and led by Guru Ram Singh Kuka. He was a disciple of Baba Balak Singh, who is considered the spiritual founder of the Namdhari sect. After Baba Balak Singh's death, Guru Ram Singh took over the leadership and transformed the movement into a more widespread socio-religious and political force.

Guru Ram Singh established a parallel administrative system within the Kuka community, including a postal service and a communication network, demonstrating an early form of resistance against the British administration. His leadership was crucial in mobilising followers and directing the movement's activities.

Analysing the Options

Let's look at the given options:

- **Guru Ram Das:** The fourth Sikh Guru, significant in Sikh history but associated with a much earlier period (16th century) and the founding of Amritsar. Not associated with the Kuka Movement.
- **Guru Nanak:** The founder of Sikhism (15th–16th century). Not associated with the Kuka Movement.
- **Guru Ram Singh:** The prominent leader and organiser of the Kuka Movement in the 19th century. This aligns with historical facts.
- **Guru Gobind Singh:** The tenth Sikh Guru, who established the Khalsa (late 17th–early 18th century). Not associated with the Kuka Movement.

Based on historical evidence, Guru Ram Singh was the leader and organiser of the Kuka Movement.

Conclusion

The Kuka Movement was organised by Guru Ram Singh, who guided its transformation from a religious revival to an anti-British political stance in 19th-century Punjab.

Movement	Organiser/Leader	Period (approx)
Kuka Movement	Guru Ram Singh	Mid-19th Century
Sikhism (Foundation)	Guru Nanak	15th–16th Century
Establishment of Khalsa	Guru Gobind Singh	Late 17th–Early 18th Century

Revision Table: Kuka Movement

Aspect	Details
Movement Name	Kuka Movement or Namdhari Movement
Organiser/Leader	Guru Ram Singh
Period	Mid-19th Century (active phase)
Originator (spiritual founder)	Baba Balak Singh
Region	Punjab
Nature	Socio-religious and Political
Key Religious Aims	Revivalist within Sikhism, purity, simplicity, anti-caste
Key Political Stance	Anti-British rule

Additional Information: Kuka Movement Context

The Kuka Movement emerged at a time when Punjab had been annexed by the British (1849). The Kukas protested against various actions of the British government, including the killing of cows (which was offensive to their beliefs), the imposition of British laws and administration, and perceived interference in religious matters. The movement became notable for its followers' distinctive white attire and their practice of chanting loudly, which led to the name "Kuka" (from the Punjabi word for scream or shout).

The movement's strong anti-British stance led to confrontations, including the Malerkotla incident in 1872, where several Kukas were executed without trial. This event led to the British taking harsh measures against the movement, including the exile of Guru Ram Singh to Rangoon (now Yangon), Myanmar, where he remained until his death. Despite the suppression, the Namdhari community continued to follow the teachings of Guru Ram Singh and kept the spirit of the movement alive.

19. Answer: d

Explanation:

India Association Founder Details

The question asks to identify the founder of the **India Association**, an important organization established during India's struggle for independence.

Background of the India Association

The **India Association** was established in Calcutta (now Kolkata) in 1876. It was formed with the objective of creating a unified nationalist opinion in India and fostering political discussion. The association aimed to unite Indians from different backgrounds and prepare them for political activity and constitutional agitation against British colonial rule. It played a significant role in the political landscape of Bengal and India during the late 19th century.

Founding and Key Figures

The establishment of the **India Association** involved several prominent Indian nationalists. Key figures associated with its founding include:

- **Surendranath Banerjee**: He is widely regarded as one of the principal founders and a leading figure of the **India Association**. Banerjee was a key nationalist leader who dedicated much of his energy to building this organization and awakening political consciousness among Indians.
- **Anandamohan Bose**: A close associate of Banerjee, Anandamohan Bose also played a crucial role in the founding and activities of the association.

Analysis of the Options

To determine the correct founder, let's look at the contributions of each individual listed in the options:

- **Dadabhai Naoroji:** While Dadabhai Naoroji was a towering figure in Indian nationalism and advocated for Indian rights, he is primarily known for founding the East India Association in London in 1866. This organization focused on raising awareness about Indian issues in Britain. He was not the founder of the India Association in Calcutta.
- **Bal Gangadhar Tilak:** Bal Gangadhar Tilak was a radical nationalist leader famous for his slogan "Swaraj is my birthright". He was a prominent leader, particularly in Maharashtra, but he did not found the India Association.
- **A.O. Hume:** A.O. Hume, a British civil servant, was instrumental in the establishment of the Indian National Congress (INC) in 1885. The INC is a different organization and was founded several years after the India Association.
- **Surendranath Banerjee:** Surendranath Banerjee was a pioneer of Indian nationalism and was actively involved in the political movements of his time. Historical accounts confirm his role as a key founder of the India Association in 1876.

Identifying the Founder

Based on the historical context and the roles played by these leaders, **Surendranath Banerjee** is recognized as a primary founder of the **India Association**. His efforts were central to its establishment and its mission to foster political awareness and unity among Indians.

20. Answer: d

Explanation:

Understanding the Assassination Following the Jallianwala Bagh Massacre

The question asks to identify the individual responsible for shooting General Dyer. It's important to understand the historical context surrounding this query, specifically

the Jallianwala Bagh massacre.

The Jallianwala Bagh Massacre

On April 13, 1919, a significant and tragic event occurred in Amritsar, Punjab, known as the Jallianwala Bagh massacre. On this day, presided over by Brigadier-General Reginald Dyer, British Indian Army soldiers opened fire on a large, unarmed gathering of Indian civilians. This crowd had assembled peacefully in Jallianwala Bagh (a walled garden). General Dyer's orders resulted in the deaths of hundreds of innocent people and left many more wounded. This brutal act deeply impacted India's struggle for independence.

Udham Singh's Vow for Revenge

A young Sardar Udham Singh witnessed the horrific aftermath of the Jallianwala Bagh massacre firsthand. Profoundly affected by the brutality, he vowed to avenge the killings of his countrymen. He dedicated his life to seeking justice for the victims.

The Assassination of Michael O'Dwyer

Years later, Udham Singh tracked down and assassinated Sir Michael O'Dwyer, the former Lieutenant Governor of the Punjab, in London on March 13, 1940. O'Dwyer was seen as the official who had sanctioned and supported General Dyer's actions at Jallianwala Bagh. While General Dyer himself died of a stroke in 1927, it was Michael O'Dwyer who was targeted by Udham Singh as the main perpetrator associated with the massacre's approval. Given the options provided, the question likely refers to the act of vengeance carried out by Udham Singh against the key figure responsible for the massacre's sanctioning.

Analyzing the Options

Let's examine the individuals listed in the options:

- Khudiram Bose: A prominent revolutionary hanged by the British in 1908 for attempting to assassinate a magistrate.
- Bhagat Singh: A famous socialist revolutionary who played a significant role in India's independence movement; he was executed in 1931.

- Madan Lal Dhingra: A revolutionary who assassinated Sir Curzon Wylie in London in 1909.
- Udham Singh: The revolutionary who assassinated Michael O'Dwyer in 1940 in retaliation for the Jallianwala Bagh massacre.

Based on the historical events and Udham Singh's actions to avenge the Jallianwala Bagh massacre by targeting Michael O'Dwyer, Udham Singh is the correct answer in the context of seeking retribution for the actions sanctioned during General Dyer's command.

21. Answer: c

Explanation:

Leading the Quit India Movement

The **Quit India Movement** was a pivotal moment in India's struggle for independence. This movement, launched on August 8, 1942, called for immediate independence from British rule.

Mahatma Gandhi's Leadership in the Quit India Movement

Mahatma Gandhi was the foremost leader and the key figure behind the **Quit India Movement**. He gave the famous "**Do or Die**" (**Kareenge ya Marenge**) call to the Indian people. His leadership was central to mobilizing millions across the nation to participate in this mass civil disobedience campaign against the British Raj. Gandhi's strategy involved non-violent resistance, urging citizens to stop cooperating with the British government, pay **Charkha Tax** (a symbolic protest against forced labor and a promotion of self-reliance), and demand the withdrawal of British forces from India.

Analysis of Key Figures

- **Mahatma Gandhi**: Widely recognized as the architect and leader of the **Quit India Movement**. His call to action galvanized the nation.

- **Jawaharlal Nehru:** While a prominent leader of the Indian National Congress and a key figure in the independence movement, the primary call and leadership for the **Quit India Movement** are most strongly associated with Mahatma Gandhi. Nehru played a crucial role in articulating the movement's goals and organizing efforts, but Gandhi's leadership was the driving force.
- **BR Ambedkar:** Dr. B.R. Ambedkar was a significant social reformer and the chief architect of the Indian Constitution. However, his political focus and activities were largely centered on issues of caste discrimination and the rights of the depressed classes. He did not lead the **Quit India Movement**.

Understanding the Movement's Genesis

The **Quit India Movement** was initiated by the Indian National Congress during World War II, demanding an end to British rule. It was a call for complete non-cooperation and civil disobedience. Although many leaders were arrested shortly after the movement began, including Mahatma Gandhi, the campaign continued across the country, fueled by the spirit of independence that Gandhi had instilled.

Therefore, when considering who **led the Quit India Movement**, Mahatma Gandhi stands out as the central figure whose call to action defined the movement's launch and spirit.

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22. Answer: d

Explanation:

'Do or Die' Slogan Context and Meaning

The question asks us to identify the person who coined the famous slogan '**Do or Die**'. This phrase is deeply connected to India's fight for independence from British rule.

Mahatma Gandhi: The Voice Behind 'Do or Die'

Mahatma Gandhi is the historical figure credited with giving the slogan '**Do or Die**'. He proclaimed this call to action during a significant moment in the Indian independence movement.

- **Movement:** Gandhi raised this slogan during the launch of the **Quit India Movement** in August 1942.
- **Meaning:** The slogan signified a final, determined push for freedom. It meant that Indians should strive with all their might for Swaraj (self-rule), accepting either success or death in the struggle. It conveyed a sense of urgency and unwavering commitment.
- **Significance:** This powerful message mobilized millions of Indians, reinforcing their resolve to achieve independence. It became a defining mantra for the movement.

Other Figures and the 'Do or Die' Slogan

The options provided include other notable Indian figures:

- PC Roy
- JC Bose
- CV Raman

While individuals like Prafulla Chandra Ray (PC Roy), Jagadish Chandra Bose (JC Bose), and CV Raman were eminent scientists and scholars who contributed immensely to India's progress, they are not associated with the '**Do or Die**' slogan. This slogan belongs specifically to the political and social activism led by Mahatma Gandhi.

Confirming the Source of the 'Do or Die' Slogan

Based on historical evidence and the context of the Indian independence movement, **Mahatma Gandhi** is the correct originator of the '**Do or Die**' slogan. His call during the **Quit India Movement** remains a powerful symbol of the struggle for freedom.

23. Answer: c

Explanation:

Understanding the Indian National Congress Second Session

The Indian National Congress (INC) was founded in 1885. Its initial sessions were crucial in shaping the course of India's freedom struggle. The question asks to identify the president of the second session of the INC.

Key Details of the Second INC Session

- **Year:** 1886
- **Venue:** Calcutta (now Kolkata)
- **President:** Dadabhai Naoroji

Dadabhai Naoroji's Presidency

The second session of the Indian National Congress, held in 1886 in Calcutta, was presided over by the eminent leader **Dadabhai Naoroji**. He was a prominent figure in the early nationalist movement and is often referred to as the "Grand Old Man of India". His presidency marked a significant step in the Congress's efforts to articulate national demands.

Analysis of Options

Let's look at the provided options:

- **Ganesh Agarkar:** While a notable social reformer and journalist, he was not the president of the second INC session.
- **Surendra Nath Banerjee:** A key leader in the early INC, he served as president in later sessions (1895 and 1913), but not the second.
- **Dadabhai Naoroji:** Correctly identified as the president of the second INC session in 1886.

- Ferozeshah Mehta: Another influential leader, he presided over the INC in 1890.

Therefore, **Dadabhai Naoroji** was the leader who presided over the second session of the Indian National Congress.

24. Answer: c

Explanation:

Understanding the Bengal Partition Effective Date

The Partition of Bengal was a significant historical event implemented in 1905 by the British authorities. This partition divided the large province of Bengal into two separate entities. The decision sparked widespread political agitation across India.

Background of the Bengal Partition

The British government, led by Viceroy Lord Curzon, officially stated that the partition was necessary for administrative reasons. They argued that the province of Bengal was too large, comprising territories such as present-day West Bengal, Bangladesh, Odisha, Bihar, and parts of Assam, making it difficult to govern effectively. However, many Indians perceived this partition as a "**divide and rule**" policy, aimed at weakening the burgeoning Indian nationalist movement, particularly in Bengal, which was a major centre of nationalist activities.

Key Date: Partition Implementation

The question specifically asks for the date on which the Partition of Bengal came into effect. This date signifies the official commencement of the administrative division.

Examining the Options Provided

The provided options for the date when the Partition of Bengal came into effect are:

- 15th August, 1905
- 15th September, 1905
- 16th October, 1905
- 15th November, 1905

Historical Confirmation of the Effective Date

Historical accounts and records clearly establish that the Partition of Bengal was officially implemented and came into effect on **16th October, 1905**. This date was marked by widespread protests across Bengal, including spontaneous public gatherings, fasting, and the observance of 'Black Day'. It also served as the catalyst for the commencement of major nationalist movements, such as the Swadeshi movement, which encouraged the boycott of British goods and the use of Indian products.

25. Answer: a

Explanation:

Identifying Non-Moderates in the National Movement

The Indian National Movement comprised various leaders with differing strategies for achieving independence from British rule. These leaders can be broadly classified into two main ideological groups: the **Moderates** and the **Extremists**. Understanding the core beliefs and methods of these factions is key to identifying leaders who did not align with the Moderate approach.

Understanding Moderate and Extremist Ideologies

The **Moderate** leaders generally favored gradual political reforms achieved through constitutional means. They believed in petitioning the British government, using parliamentary methods, and appealing to British justice. Their approach was characterized by persuasion and constitutional agitation.

In contrast, the **Extremists** (or Radicals) felt that the Moderate methods were too slow and ineffective. They advocated for more assertive strategies, including mass mobilization, Swadeshi (promoting domestic goods), Boycott of British goods, and ultimately, demanding Swaraj (self-rule). They believed Swaraj was their birthright and sought more direct action.

Analysis of Leaders' Political Stances

Let's examine the roles of the leaders listed in the options:

- **Dadabhai Naoroji:** Revered as the 'Grand Old Man of India', Dadabhai Naoroji was a prominent **Moderate** leader. His political activities focused on highlighting British economic exploitation through his famous 'Drain Theory' and advocating for Indian representation in British governance using constitutional methods.
- **MG Ranade:** Mahadev Govind Ranade was a respected judge and a leading figure among the **Moderates**. He believed in a gradual approach to political and social reforms, working within the established legal and constitutional framework. He was a mentor to Gopal Krishna Gokhale.
- **Gopal Krishna Gokhale:** Widely regarded as the most influential **Moderate** leader of his time, Gokhale was known for his eloquence, administrative insights, and commitment to constitutional agitation. He founded the Servants of India Society to train people for social service and political work through peaceful means.
- **Bal Gangadhar Tilak:** Bal Gangadhar Tilak was a towering figure but belonged to the **Extremist** faction of the National Movement. He famously declared, "Swaraj is my birthright, and I shall have it." Tilak believed in mass participation and active struggle, using methods like festivals and newspapers (like 'Kesari') to rally the public. His assertive methods and call for Swaraj set him apart from the Moderate approach.

Identifying the Non-Moderate Leader

Based on the distinct ideologies:

- Dadabhai Naoroji operated as a Moderate.

- MG Ranade was a key Moderate leader.
- Gopal Krishna Gokhale represented the Moderate viewpoint.
- Bal Gangadhar Tilak was an advocate for more direct action and mass mobilization, identifying him as an Extremist, not a Moderate.

Therefore, Bal Gangadhar Tilak stands out as the leader who was not known as a Moderate in the Indian National Movement.

26. Answer: c

Explanation:

Understanding the Azad Hind Fauz Setup Location

The question asks about the location where the Azad Hind Fauz was established. The Azad Hind Fauz, also known as the Indian National Army (INA), was a military force formed by Indian nationalists during World War II. Its aim was to secure India's independence from British rule.

Formation of the Azad Hind Fauz

The initial idea for the INA came from Mohan Singh, an Indian officer of the British Indian Army captured by the Japanese in Malaya. He gathered Indian prisoners of war (POWs) to form a force. However, this first INA dissolved due to disagreements with the Japanese.

A second, more significant, formation of the Azad Hind Fauz occurred later, primarily under the leadership of Subhas Chandra Bose. Bose, a prominent Indian nationalist leader, arrived in Southeast Asia in 1943. He revitalized the Indian independence movement there and took command of the INA.

Location of the Setup: Singapore

The second and main phase of the Azad Hind Fauz was formally re-established and significantly expanded in Singapore. Singapore served as a crucial centre for the

Indian independence movement in Southeast Asia during this period. Subhas Chandra Bose made Singapore his headquarters and from there, he led the provisional government of Azad Hind and the Azad Hind Fauz.

Key activities related to setting up and organizing the Azad Hind Fauz, including recruitment of Indian civilians living in Southeast Asia and former POWs, establishment of training camps, and planning military operations, took place in Singapore and surrounding areas.

Based on historical records, Singapore is recognized as the place where the Azad Hind Fauz was prominently re-established and operationalized under Subhas Chandra Bose.

Key Details about Azad Hind Fauz

Aspect	Details
Alternative Name	Indian National Army (INA)
Main Leader	Subhas Chandra Bose
Primary Location of Setup/Operations	Singapore
Time Period	During World War II (particularly from 1943 onwards)
Goal	To achieve India's independence from British rule

Evaluating the Options

- Japan:** While Japan supported the Azad Hind Fauz, it was not set up in Japan itself.
- Burma:** The Azad Hind Fauz operated in Burma (now Myanmar) during its campaigns, but the main setup and headquarters were not initially there.

- **Singapore:** This is the correct location where the Azad Hind Fauz was significantly re-established and commanded by Subhas Chandra Bose.
- **England:** England was the ruling power against which the Azad Hind Fauz fought, so it could not have been set up there.

Therefore, the place where the Azad Hind Fauz was set up is Singapore.

Azad Hind Fauz Revision Table

Term	Description
Azad Hind Fauz	Indian National Army, formed during WWII to fight for Indian independence.
Subhas Chandra Bose	Prominent Indian nationalist leader who led the Azad Hind Fauz from 1943.
Singapore	Key city in Southeast Asia where the Azad Hind Fauz was re-established and headquartered.
Provisional Government of Azad Hind	Government-in-exile established by Subhas Chandra Bose in Singapore.

Additional Information on Azad Hind Fauz and Indian Independence

The Azad Hind Fauz played a symbolic role in the Indian independence movement. Although it did not achieve its military objectives, the trials of its officers by the British after the war generated significant public sympathy and anti-British sentiment in India.

Subhas Chandra Bose's famous slogan "Give me blood and I shall give you freedom!" was given in Burma but is closely associated with the spirit of the Azad Hind Fauz.

The soldiers of the Azad Hind Fauz came from diverse backgrounds, including Indian prisoners of war captured by the Japanese and Indian civilians living in Southeast Asian countries.

27. Answer: a

Explanation:

Bhagat Singh's Execution Date

This question relates to a significant event in India's independence movement, focusing on the martyrdom of revolutionary leaders Bhagat Singh, along with his associates Rajguru and Sukhdev.

Historical Context of Bhagat Singh, Rajguru, and Sukhdev Execution

Bhagat Singh, Shivaram Rajguru, and Sukhdev Thapar were central figures in the Indian independence struggle, advocating for complete independence from British rule through revolutionary means. Their actions, including the Lahore conspiracy case, led to their sentencing by the colonial government.

Determining the Hanging Date

The execution date is a crucial piece of historical information regarding these revolutionaries. They were sentenced to death by the British authorities.

- The question asks for the specific date when Bhagat Singh, Rajguru, and Sukhdev were hanged.
- Historical records confirm that this event occurred during the British Raj.
- The precise date marks a pivotal moment, often commemorated as Martyrs' Day in India.

The Exact Date of Execution

Bhagat Singh, Rajguru, and Sukhdev were executed by hanging on **March 23, 1931**. This date is widely recognized and remembered in Indian history.

Significance of the Event

The hanging of these three young revolutionaries sent shockwaves across India, intensifying the call for independence and inspiring many others to join the freedom struggle. Their sacrifice continues to be remembered as a symbol of patriotism and courage.

28. Answer: d

Explanation:

This question asks to identify the person who presided over the Cabinet Mission. Understanding the structure and leadership of historical missions is crucial for grasping India's independence journey.

Cabinet Mission Leadership Explained

The **Cabinet Mission** was a high-level mission sent to India by the British government in March 1946. Its main objective was to discuss the transfer of powers from the British to the Indian leadership. The mission consisted of three British cabinet members:

- Lord Pethick-Lawrence (Secretary of State for India)
- Sir Stafford Cripps (President of the Board of Trade)
- A.V. Alexander (First Lord of the Admiralty)

Among these members, **Sir P Lawrence**, also known as Lord Pethick-Lawrence, held the position of the Secretary of State for India and served as the **president** or the head of the delegation.

Analyzing the Options for Cabinet Mission President

Let's look at why the other options are incorrect:

- **Lord Attlee / Clement Attlee:** Clement Attlee was the Prime Minister of the United Kingdom in 1946. While he was the one who sent the Cabinet Mission, he did not preside over it in India. Lord Attlee is the same person as Clement Attlee.
- **Strafford Cripps:** Sir Stafford Cripps was a prominent member of the Cabinet Mission and played a significant role in the negotiations, but he was not the head or president of the mission.
- **Sir P Lawrence:** Lord Pethick-Lawrence was the Secretary of State for India and led the Cabinet Mission delegation. Therefore, he presided over the mission.

Key Role of Sir P Lawrence in Cabinet Mission

Sir P Lawrence chaired the meetings and discussions held by the Cabinet Mission in India. His leadership guided the mission's attempts to negotiate with Indian leaders regarding the framework for India's future governance and the process of transferring power. The mission's proposals ultimately formed the basis for the partition of India and the creation of Pakistan and India.

Therefore, the correct identification of the leader who presided over the mission is essential.

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29. Answer: c

Explanation:

Understanding the 'Inquilab Zindabad' Slogan

The question asks who popularized or gave the famous slogan 'Inquilab Zindabad'. This slogan is closely associated with India's freedom struggle and means "Long live the revolution!"

Origin and Popularity of Inquilab Zindabad

While the slogan 'Inquilab Zindabad' was originally coined by Urdu poet and Indian freedom fighter Maulana Hasrat Mohani in 1921, it was significantly popularized by another prominent revolutionary figure. He made this slogan a rallying cry during the freedom struggle.

Let's look at how the slogan became widely known:

- Maulana Hasrat Mohani coined the slogan in 1921.
- It became a powerful symbol of the revolutionary movement against British rule in India.
- A particular revolutionary leader adopted this slogan and used it extensively in his speeches and activities, bringing it into the mainstream consciousness of the Indian independence movement.
- This leader famously shouted this slogan after bombing the Central Legislative Assembly in Delhi in 1929 along with Batukeshwar Dutt.

Analyzing the Options

We are given four options:

1. Iqbal
2. MK Gandhi
3. Bhagat Singh
4. SC Bose

Let's consider each option in relation to the slogan:

- **Iqbal:** Allama Muhammad Iqbal was a poet and philosopher, known for writing 'Saare Jahan Se Achha', but not primarily for the 'Inquilab Zindabad' slogan.
- **MK Gandhi:** Mahatma Gandhi was a leader of the independence movement, known for non-violent resistance and slogans like 'Quit India', but not 'Inquilab Zindabad'.
- **Bhagat Singh:** Bhagat Singh was a revolutionary who widely used and popularized the slogan 'Inquilab Zindabad', making it synonymous with his revolutionary activities.
- **SC Bose:** Subhas Chandra Bose was another prominent leader, known for leading the Forward Bloc and the INA, and slogans like 'Jai Hind' and 'Delhi

Chalo', but not 'Inquilab Zindabad'.

Based on historical accounts, it is clear that Bhagat Singh was the figure who most prominently used and popularized the 'Inquilab Zindabad' slogan, making it a battle cry for the revolutionaries.

Conclusion

The slogan 'Inquilab Zindabad', although coined by Maulana Hasrat Mohani, was made famous and widely adopted by the revolutionary **Bhagat Singh**. Therefore, he is credited with giving the slogan its prominence in the Indian freedom struggle.

Slogan	Associated Leader(s)
Inquilab Zindabad	Maulana Hasrat Mohani (coined), Bhagat Singh (popularized)
Quit India	Mahatma Gandhi
Jai Hind	Abid Hasan Safarani (coined), Subhas Chandra Bose (popularized)
Delhi Chalo	Subhas Chandra Bose

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Revision Table: Key Slogans and Leaders

Here is a quick table to revise some important slogans from the Indian freedom movement:

Slogan	Leader(s)
Inquilab Zindabad	Bhagat Singh (popularized), Maulana Hasrat Mohani (coined)
Do or Die (Karo ya Maro)	Mahatma Gandhi
Swaraj is my birthright	Bal Gangadhar Tilak
Sarfarooshi Ki Tamanna	Ram Prasad Bismil (popularized)

Additional Information about Bhagat Singh and Inquilab Zindabad

Bhagat Singh was a charismatic revolutionary who deeply influenced the youth of India. His use of 'Inquilab Zindabad' transformed it from a mere phrase into a powerful expression of the desire for complete revolution against oppression. He, along with Batukeshwar Dutt, shouted this slogan in the Central Legislative Assembly after throwing bombs, not to cause harm, but "to make the deaf hear." This act, and the subsequent trial where they repeatedly chanted 'Inquilab Zindabad', cemented the slogan's place in history alongside Bhagat Singh's name.

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30. Answer: c

Explanation:

Shri Yogender Shukla's Location on December 7, 1942

This solution addresses the location associated with Shri Yogender Shukla on the specific date of December 7, 1942, within the context of India's freedom struggle.

Background of Shri Yogender Shukla's Activism

Shri Yogender Shukla was a significant revolutionary freedom fighter from Bihar, actively participating in India's fight for independence. He was closely associated with organizations like the Hindustan Socialist Republican Association (HSRA) and played a vital role during various phases of the movement, including the Non-Cooperation Movement and the Quit India Movement.

Arrest and Transfer During Quit India Movement

During the Quit India Movement, which began in August 1942, the British authorities intensified their crackdown on nationalist activities. Many prominent leaders and activists were arrested. Shri Yogender Shukla was one such key figure arrested during this period.

- Shri Yogender Shukla was arrested on October 3, 1942, in the village of Patahi, located near Pupri in the Sitamarhi district of Bihar.
- Following his arrest, he was transferred to the jail in **Muzaffarpur**.

Events of December 7, 1942

The date December 7, 1942, is historically significant concerning Shri Yogender Shukla's activities while in custody.

- While detained in Muzaffarpur, Shri Yogender Shukla managed to escape. The escape is often cited as occurring on December 7, 1942. He reportedly escaped from a hospital where he was possibly being treated, or during a transfer.
- This event places him directly linked with **Muzaffarpur** on the specified date. Although the question asks where he was "brought on" this date, historical records point to his escape *from* Muzaffarpur on this day, indicating his presence there. He had been brought to Muzaffarpur earlier after his arrest in October 1942.

Analysis of Options Provided

The question asks for the location where Shri Yogender Shukla was brought on December 7, 1942. Based on historical accounts of his escape:

- Option 1: Ranchi

- Option 2: Munger
- Option 3: Muzaffarpur
- Option 4: Bhagalpur

Historical records confirm that Shri Yogender Shukla escaped from Muzaffarpur on December 7, 1942. He had been incarcerated in Muzaffarpur following his arrest in October 1942. Therefore, Muzaffarpur is the relevant location associated with him on this date.

Conclusion on Shri Yogender Shukla's Location

Shri Yogender Shukla's presence and escape are documented in Muzaffarpur on December 7, 1942. This makes **Muzaffarpur** the correct answer relating to his location or the events surrounding him on that date.

31. Answer: a

Explanation:

Newspapers Published from Patna

This explanation helps identify which newspaper among the given options was published from Patna.

'Indian Nation' Publication Hub

The newspaper known to be published from Patna was **Indian Nation**. This was an English-language daily newspaper that served the region of Bihar and had its roots in Patna.

Analysis of Other Newspaper Origins

We can look at the locations associated with the other newspapers listed:

- **Punjab Kesari:** This is a prominent Hindi newspaper primarily published from Jalandhar in Punjab.
- **Prabhakar:** Historical records often link the newspaper 'Prabhakar' to Delhi as its place of publication.
- **Don:** This name does not typically correspond to a major newspaper historically published from Patna.

Based on this information, **Indian Nation** stands out as the newspaper from the options provided that was published in Patna.

32. Answer: a

Explanation:

Jagat Narayan Lal's Imprisonment Details

The question asks about the specific jail where Jagat Narayan Lal was sent during his involvement in historical events, likely related to India's independence movement.

Jagat Narayan Lal, a known figure in historical contexts, was indeed imprisoned. Research and historical records indicate that during one of his arrests, he was sent to **Bankipur Jail**.

Let's look at the options provided:

- **Bankipur Jail:** This is identified as the correct destination.
- **Camp Jail:** This was not the specified jail in this context.
- **Bhagalpur Jail:** Historical records do not primarily associate Jagat Narayan Lal's specific imprisonment mentioned in this context with Bhagalpur Jail.
- **Hazaribagh Jail:** This was not the specified jail in this context.

Reasoning for Bankipur Jail

Bankipur Jail, located in Patna, Bihar, has been a significant location for political prisoners during various historical periods in India. Jagat Narayan Lal's stay in **Bankipur Jail** is a documented part of his activist life.

Understanding the specific locations associated with historical figures helps in grasping the timeline and events of significant movements. In this case, pinpointing **Bankipur Jail** provides clarity on Jagat Narayan Lal's journey.

33. Answer: c

Explanation:

Jai Prakash Narayan's Socialist Party Affiliation

Jai Prakash Narayan, often referred to as J.P., was a prominent figure in the Indian independence movement and a significant political thinker. Understanding his political journey involves recognizing the specific party he was most closely associated with.

Exploring Jai Prakash Narayan's Political Roots

Jai Prakash Narayan's political ideology and activities were deeply rooted in socialist principles. After returning from the United States, where he studied sociology, he joined the Indian National Congress. However, he soon found the Congress party's approach too moderate and sought a more radical path toward social and economic justice.

Association with the Socialist Movement

- Jai Prakash Narayan was instrumental in the formation of the **Congress Socialist Party (CSP)** within the Indian National Congress in 1934.
- The CSP aimed to infuse socialist ideas into the Congress's national movement, advocating for the rights of peasants and workers.

- Later, J.P. and other socialist leaders left the Congress to form the **Socialist Party** (later known as the Praja Socialist Party and then the Samyukta Socialist Party).
- His activism focused on issues of land reform, poverty alleviation, and empowering the masses through socialist ideals.

Key Contributions and Party Membership

Throughout his career, Jai Prakash Narayan remained a key ideologue and leader within the socialist movement in India. His commitment was to building a socialist society through democratic means. Therefore, his primary political identity and affiliation was with the **Socialist** party. While he worked within the broader nationalist framework initially, his distinct political contributions and organizational efforts were centered around the socialist cause and the parties that represented it.

34. Answer: d

Explanation:

Ram Chander Sharma's Village Belonging

This explanation focuses on identifying the village associated with the individual Ram Chander Sharma, exploring the provided options to determine his place of origin.

Examining Ram Chander Sharma's Village Association

The question requires knowledge about the background of Ram Chander Sharma, specifically the village he belonged to. The options provided are:

- Gogri
- Indrapur
- Pema
- Amhara

Each option represents a potential village of origin for Ram Chander Sharma. Determining the correct village involves recalling or referencing biographical details about him.

Identifying the Correct Village: Amhara

Based on historical records and biographical information, Ram Chander Sharma was associated with the village named **Amhara**. This makes **Amhara** the correct answer among the choices provided.

Understanding the village someone belonged to, like Ram Chander Sharma's connection to **Amhara**, helps in contextualizing their life, activities, and historical significance.

35. Answer: a

Explanation:

Shri Narsingh Narayan's Political Ideology Explored

Shri Narsingh Narayan was a significant figure in India's political landscape, particularly during the era of the independence movement and the early years following it. Understanding his political identity requires examining his affiliations, statements, and the socio-economic principles he advocated for.

Identifying Shri Narsingh Narayan's Political Affiliation

The question asks to identify the primary political leaning of Shri Narsingh Narayan from the given options: Socialist, Nationalist, Internationalist, and Communist.

- **Socialist:** This ideology emphasizes social ownership or regulation of the means of production, distribution, and exchange, aiming for greater economic equality and social justice.
- **Nationalist:** This pertains to devotion, advocacy, or allegiance to one's own nation or nation-state, often focusing on national independence and unity.

- **Internationalist:** This ideology promotes cooperation and solidarity among nations, often advocating for global governance or transcending national boundaries.
- **Communist:** A specific, often more radical, form of socialism advocating for a classless society, communal ownership of the means of production, and often, a transitional state (dictatorship of the proletariat).

Shri Narsingh Narayan: A Socialist Visionary

Historical records and biographical information indicate that Shri Narsingh Narayan was deeply involved in socialist movements in India. He was a close associate of prominent socialist leaders like Acharya Narendra Dev and Jayaprakash Narayan.

Key points supporting his socialist identity:

- He was a key member of the **Congress Socialist Party (CSP)**, founded in 1934, which aimed to infuse socialist principles into the Indian National Congress.
- Shri Narsingh Narayan consistently worked towards uplifting the **peasantry** and the **working class**, advocating for their rights and economic empowerment through socialist reforms.
- His vision for India involved significant economic restructuring, focusing on equitable distribution of resources and state intervention for the welfare of the masses, which are hallmarks of socialist thought.

Contextualizing Other Options

While Shri Narsingh Narayan was undoubtedly a patriot and deeply committed to India's independence (**Nationalist**), his specific socio-economic program and political activism clearly distinguished him as a **Socialist**. Nationalism was a broader umbrella under which various economic ideologies coexisted during the freedom struggle. His primary focus on economic equality and worker/peasant rights aligns him more specifically with socialism than general nationalism.

Similarly, while international cooperation might be a value shared by many, it was not the defining characteristic of his political work. His focus remained largely on transforming the socio-economic fabric of India along socialist lines. He was also

distinct from the Communist movement, differing on key ideological and strategic points, particularly regarding democratic processes.

Conclusion

Based on his active participation in socialist organizations and his consistent advocacy for economic equality and the rights of the underprivileged, Shri Narsingh Narayan is best identified as a **Socialist**.

36. Answer: c

Explanation:

The correct answer is Ghalib.

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Key Points

- One of the greatest poets, **Mirza Asadullah Khan Ghalib** witnessed the rebellion of **1857** while he was in **Delhi**.
- **Mirza Ghalib** spoke about the 1857 rebellion in many of his letters and articles, depicting the pain and sorrow felt during the **1857** mutiny.

- Ghalib was in Delhi when the 1857 rebellion was ongoing, he observed the process and then presented his views on various issues through his writings.



Additional Information

- The Indian Rebellion of 1857–59 was the first organized expression of resistance against the British East India Company.

- The rebellion is known by several names: the Sepoy Rebellion (by British historians), the Indian Rebellion, the Great Rebellion (by Indian historians), the Rebellion of 1857, the Indian Revolt, and the First War of Independence (by Vinayak Damodar Savarkar).
- The 1857 rebellion ultimately erupted over the **greased cartridges incident**.
 - A rumor spread that the new **Enfield rifles** had cartridges greased with **cow and pig fat**.
 - Before loading these rifles, the sepoys had to bite off the paper covering the cartridges.
 - Both Hindu and Muslim sepoys refused to use them.
- In **March 1857**, a soldier named **Mangal Pandey** in **Barrackpore** refused to use the cartridges and attacked his senior officers.
- The **political causes of the rebellion** were the British policy of expansion through the **Doctrine of Lapse** and **direct annexation**.
 - Under the **Doctrine of Lapse**, when a ruler of a protected state dies without a natural heir, his state was not to be ruled by an adopted heir according to the age-old tradition of the country.

37. Answer: a

Explanation:

Understanding Opposition During the Revolt of 1857

The Indian Revolt of 1857 was a major turning point in Indian history, challenging British rule. Many individuals played significant roles in opposing the British forces. Identifying the most determined or 'bitterest' enemy involves understanding the impact and intensity of their opposition as perceived by the British themselves.

Key Figures Opposing the British

Let's examine the contributions of the individuals mentioned in the options:

- **Maulvi Ahmadullah Shah:** Often referred to as the 'Prophet of Doom' by the British, Maulvi Ahmadullah Shah was a pivotal leader of the Revolt of 1857, particularly active in Faizabad, Awadh. He was a charismatic figure who rallied a large number of people against the British. His activities were so disruptive that the British government considered him one of their most significant adversaries, even placing a substantial bounty on his head. His relentless fight and ability to evade capture for a considerable period made him a highly feared opponent.
- **Maulvi Imdadullah:** Associated with the Faraizi movement in East Bengal, Maulvi Imdadullah led peasant uprisings against the local landlords and the British administration. While a significant local leader, his widespread impact during the main phase of the 1857 Revolt across northern India was less pronounced compared to figures like Ahmadullah Shah.
- **Maulana Faiz-ul-Haq Khairabadi:** A renowned scholar and an active participant in the Revolt, particularly in the regions of Awadh and Delhi. He joined the rebellion and fought against the British. He was later arrested and transported to the Andaman Islands, where he died. He was a respected leader whose opposition was significant.
- **Nawab Liaquat Ali:** He was a key figure in Kanpur, joining hands with Nana Sahib. He was appointed as a minister in the court established by Nana Sahib after the British were expelled from Kanpur. His role was crucial in the administration of the rebel government in that area.

Identifying the Bitterest Enemy

While all the mentioned individuals were opponents of the British during the Revolt of 1857, historical accounts and the British perspective often single out **Maulvi Ahmadullah Shah** as the most formidable and persistent adversary. Key reasons include:

- **Widespread Influence:** His leadership extended across a significant region, drawing considerable support.
- **Active Combatant:** He was directly involved in numerous military confrontations against the British forces.
- **British Concern:** The substantial reward offered by the British for his capture underscores the immense threat they perceived him to be. He was seen as a

central figure whose elimination was crucial for suppressing the rebellion.

- **Sustained Resistance:** He maintained a strong stance and continued his efforts against the British throughout much of the conflict.

Therefore, based on the intensity of his opposition and the British reaction to his activities, **Maulvi Ahmadullah Shah** is widely considered the bitterest enemy of the British among the given options during the Revolt of 1857.

38. Answer: b

Explanation:

Indian Polity Supremacy Explained

Understanding the concept of supremacy within a nation's governance structure is crucial for grasping how power is distributed and exercised. In the context of Indian Polity, the question asks to identify the ultimate source of authority and the supreme law.

Constitution: The Supreme Law in Indian Polity

The Constitution of India serves as the supreme law of the land. It is the foundational document that outlines the structure of the government, defines its powers and limitations, establishes fundamental rights for citizens, and sets forth the principles of governance. All branches of government – the executive, legislature, and judiciary – derive their authority from the Constitution and are bound by its provisions. Its supremacy ensures that governmental actions remain within the constitutional framework, safeguarding democracy and the rule of law.

Parliament's Role vs. Constitution

The Parliament of India is the legislative body responsible for making laws. While the Parliament holds significant power, it is not supreme. Its powers are defined and limited by the Constitution. Parliament can amend the Constitution, but only

through procedures laid down within the Constitution itself. It cannot override or violate the basic structure or fundamental principles enshrined in the Constitution.

Supreme Court's Function in Polity

The Supreme Court of India is the highest judicial body. Its primary role is to interpret the Constitution, protect citizens' fundamental rights, and act as the ultimate court of appeal. The Supreme Court plays a vital role in upholding the Constitution's supremacy through judicial review. However, the Court itself operates under the Constitution and derives its powers from it. Therefore, the Supreme Court is a guardian of the Constitution, not supreme over it.

Religion's Place in Governance

India is a secular nation. While religion plays a significant role in the lives of many citizens, it does not hold a position of legal or constitutional supremacy in the governance framework. The Constitution guarantees freedom of religion but separates religious affairs from state governance.

Conclusion on Indian Polity Supremacy

Based on the foundational principles of Indian governance, the **Constitution** stands as the supreme authority. It is the bedrock upon which the Parliament, the Supreme Court, and the executive operate, ensuring a system of checks and balances and upholding the rights and freedoms of its citizens.

39. Answer: b

Explanation:

Governor: Executive Head of State Government

Understanding the structure of a state government in India involves recognizing the distinct roles of various officials. The question asks to identify the **executive head** of

the State Government. This position holds the constitutional authority for the state's administration.

Constitutional Basis of Executive Headship

The Constitution of India outlines the distribution of powers within the state executive. Key articles define the roles and responsibilities:

- Article 154(1) states that the **executive power** of the State is vested in the **Governor**.
- The Governor exercises this power either directly or through officers subordinate to him, according to the Constitution.

This means the Governor is the constitutionally recognized, or *de jure*, head of the state's executive branch.

Role of the Governor

- The **Governor** is the nominal or constitutional head of the state.
- They are appointed by the President of India.
- While the Governor holds the executive power, they usually exercise it based on the advice of the Council of Ministers, led by the Chief Minister.
- However, the Governor has certain discretionary powers specified in the Constitution, acting independently of the Council of Ministers in specific circumstances.

Role of the Chief Minister

- The **Chief Minister** is the real or *de facto* executive head of the state government.
- They lead the Council of Ministers, which is collectively responsible to the State Legislative Assembly.
- The Chief Minister and their ministers handle the actual day-to-day administration and policy implementation.

Distinguishing Other Roles

- **The Secretary to the Chief Minister:** This is a secretarial support role, assisting the Chief Minister in administrative tasks. This position does not involve executive decision-making power for the state.
- **The Chief Secretary:** As the head of the state civil services, the Chief Secretary is the senior-most bureaucrat and principal advisor to the state government. While holding a position of significant administrative influence, they are not the constitutional executive head.

Conclusion on Executive Headship

In summary, while the Chief Minister leads the government and exercises the actual executive functions, the Constitution designates the **Governor** as the formal executive head of the State Government. The Governor represents the state, embodies its executive authority legally, and performs various constitutional duties, including appointing the Chief Minister and giving assent to bills.

40. Answer: b

Explanation:

State Government Legal Advisor Role

This question focuses on identifying the principal legal advisor for a State Government within the Indian administrative framework. Understanding the distinct roles of various legal officials is crucial.

Advocate General Advising State Government

The individual constitutionally designated to advise the State Government on legal issues is the **Advocate General**. As per Article 165 of the Constitution of India, the Advocate General serves as the highest law officer for a state.

- The appointment of the Advocate General is made by the Governor of the state.

- Key responsibilities include providing legal counsel to the state government, performing duties of a legal nature assigned by the Governor, and representing the state in legal proceedings, particularly in the High Court.
- This role is specific to advising and representing the interests of the state government.

Comparison with Other Legal Positions

To clarify why the Advocate General is the correct choice, let's look at the other options:

- **Attorney General:** The Attorney General of India is the chief legal advisor to the Union Government (Central Government) and is appointed under Article 76 of the Constitution. They do not typically advise state governments directly.
- **Solicitor General:** The Solicitor General is a law officer who assists the Attorney General in performing their duties. Their primary focus is on matters related to the central government.
- **Chief Justice of the High Court:** The Chief Justice heads the High Court, which is the highest judicial body in a state. While the High Court resolves legal matters and interprets laws, the Chief Justice's role is judicial, not advisory to the executive branch (the State Government) on policy or legal strategy.

Based on their defined constitutional roles, the **Advocate General** is the designated legal advisor for the State Government.

41. Answer: b

Explanation:

Executive Subordination to Legislature in Indian Polity

Understanding the relationship between different branches of government is crucial in Indian Polity. The question asks which body the **executive** is subordinate to. In

India's parliamentary system, based on the Westminster model, the **executive** branch is intrinsically linked to, and accountable to, the **legislature**.

Defining the Branches

- **Executive:** In India, the executive primarily consists of the President, the Prime Minister, and the Council of Ministers. It is responsible for implementing laws and administering the country.
- **Legislature:** In India, the legislature is Parliament, comprising the President, the Lok Sabha (House of the People), and the Rajya Sabha (Council of States). It is responsible for making laws.

The Principle of Subordination

The core principle of India's parliamentary democracy is that the **executive** (specifically, the Prime Minister and the Council of Ministers) derives its legitimacy and authority from the **legislature**. Key aspects of this relationship include:

- **Origin:** The Prime Minister is typically the leader of the majority party or coalition in the Lok Sabha, and the Council of Ministers are chosen from members of either the Lok Sabha or the Rajya Sabha.
- **Accountability:** The executive is collectively responsible to the Lok Sabha. This means the government remains in power only as long as it commands the confidence of the majority in the Lok Sabha.
- **Control Mechanisms:** The legislature exercises control over the executive through various tools like questions during question hour, debates, adjournment motions, and importantly, the vote of no-confidence. If a no-confidence motion is passed against the government by the Lok Sabha, the entire Council of Ministers must resign.

This direct link and accountability demonstrate that the **executive** is subordinate to the **legislature** in the Indian political framework.

Analysis of Other Options

- **Judiciary:** The Indian Constitution establishes an independent judiciary. While the judiciary can review the actions of the executive and legislature (judicial

review) and ensure they operate within constitutional limits, the executive is not 'subordinate' to the judiciary in the sense of deriving its existence or political accountability from it.

- **Election Commission:** This is a constitutional body that conducts elections and ensures fairness. It is independent, but the executive is not subordinate to it.
- **Union Public Service Commission (UPSC):** This is another constitutional body responsible for conducting examinations for recruitment to civil services and advising the government on service-related matters. The executive is not subordinate to the UPSC.

Conclusion

Based on the structure and functioning of the Indian parliamentary system, the **executive** branch is accountable to and dependent on the **legislature** for its continuation in office. Therefore, the executive is subordinate to the legislature.

42. Answer: d

Explanation:

Zero Hour: Understanding Political Jargon

In the realm of political jargon, particularly within parliamentary procedures, "**Zero Hour**" refers to a specific, yet distinct, interval in the daily functioning of the legislature. It is an established time when Members of Parliament (MPs) are given the opportunity to raise issues of urgent public importance without needing to give prior notice. This unique session typically follows the Question Hour.

Significance of Zero Hour in Parliament

The Zero Hour serves as a vital mechanism for MPs to bring critical and current matters to the government's attention promptly. Unlike the structured Question Hour, where questions are pre-listed and follow a formal question-and-answer format, Zero Hour allows for raising subjects that might not be on the official agenda.

for the day. This flexibility makes it a powerful tool for highlighting emergent issues and ensuring parliamentary accountability on a wide range of topics.

Analysis of Options Related to Parliamentary Sessions

To understand what Zero Hour represents, let's analyze the given options concerning parliamentary proceedings:

- **Day when no business in Parliament is done:** This option is incorrect because Zero Hour is an active period during which parliamentary business, specifically the raising and discussion of issues, occurs.
- **Suspended motion:** A suspended motion is one that has been temporarily set aside according to specific parliamentary rules. Zero Hour is a scheduled part of the proceedings, not a motion that has been suspended.
- **Adjourned time:** Adjournment refers to the suspension of the House proceedings for a short period or until a later date. Zero Hour is a specific time slot allocated within the day's business, not simply a period of adjournment.
- **Question-answer session:** While distinct from the formal "Question Hour," Zero Hour functions as a session where members present issues, often leading to discussions and implied questions or requests for information from the government. It's a time for members to bring forward matters for consideration and response, making it the most fitting description among the choices provided, representing a time for addressing pressing issues through discussion.

Key Characteristics of Zero Hour

- It follows the Question Hour.
- Issues can be raised without prior notice.
- It addresses matters of urgent public importance.
- It allows for flexibility in parliamentary discussion.

43. Answer: b

Explanation:

Understanding the 42nd Constitutional Amendment Act

The question asks for the specific term used to describe the ten additions or commands introduced by the 42nd Constitutional Amendment Act of 1976. This amendment is a landmark piece of legislation in India's constitutional history, often referred to as the "Mini-Constitution" due to the significant changes it brought about.

One of the most notable inclusions made by the 42nd Constitutional Amendment Act was the addition of a new part to the Constitution, specifically **Part IV-A**. This new part was dedicated to a specific set of principles guiding citizens.

Exploring Fundamental Duties

The provisions added under **Part IV-A** of the Indian Constitution are known as **Fundamental Duties**. The 42nd Amendment Act incorporated a total of ten Fundamental Duties, emphasizing the responsibilities and obligations of citizens towards the nation. These duties were added based on the recommendations of the Swaran Singh Committee. The addition aimed to instill a sense of national consciousness and civic responsibility among the people.

These duties serve as a reminder to citizens that they have certain obligations while enjoying their fundamental rights. They cover aspects like upholding the sovereignty, unity, and integrity of India, protecting public property, and developing the scientific temper.

Analysis of Other Options

Let's consider why the other options are not the correct term for the ten commands added by the 42nd Amendment:

- **Fundamental Rights:** These are enshrined in Part III of the Constitution and guarantee basic civil liberties to citizens. They were not added by the 42nd Amendment Act.

- **Panchayati Raj Principles:** While inspired by the Directive Principles (Part IV), specific principles related to Panchayati Raj were not the 'ten commands' directly added by the 42nd Amendment in the context asked.
- **Directive Principles of State Policy:** These are principles outlined in Part IV of the Constitution, which guide the State in governance. They existed before the 42nd Amendment, although the amendment did add certain directives related to child care and education. However, the 'ten commands' specifically refer to the new category introduced.

Conclusion on the Terminology

Therefore, the ten commands introduced by the 42nd Constitutional Amendment Act are universally referred to as **Fundamental Duties**.

44. Answer: c

Explanation:

Understanding the Panchayati Raj System's Constitutional Basis

The question asks about the constitutional provision where the Panchayati Raj System in India is initially laid down. The Panchayati Raj System refers to the system of local self-government in rural India. Understanding its foundation in the Indian Constitution is key to answering this question.

Analyzing Constitutional Options for Panchayati Raj

Let's examine the relevant parts of the Indian Constitution mentioned in the options:

- **Fundamental Rights (Part III):** These rights are guaranteed to citizens and are enforceable in courts. They focus on civil liberties and political freedoms. The Panchayati Raj System, while important for governance, is not directly listed as a Fundamental Right.

- **Fundamental Duties (Part IV-A):** Added later, these duties are obligations imposed on citizens, like respecting the Constitution or protecting public property. The Panchayati Raj System does not fall under the category of citizens' duties.
- **Directive Principles of State Policy (DPSP – Part IV):** These are guidelines and principles that the State (government) should consider while formulating policies and enacting laws. They aim to establish a welfare state and promote social and economic justice. Article 40 of the Constitution, found within this Part, specifically addresses the organisation of village panchayats.
- **All of the above:** Since the Panchayati Raj System is primarily linked to one specific Part of the Constitution, this option is unlikely to be correct.

Locating Panchayati Raj in the Constitution: Article 40

The Indian Constitution explicitly mentions the Panchayati Raj System in Part IV, under the Directive Principles of State Policy.

Article 40 states: The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government.

This article clearly directs the government to take measures to establish and strengthen village-level self-governing bodies, which is the essence of the Panchayati Raj System. Therefore, the system's initial constitutional foundation is laid down as a directive principle.

Evolution of Panchayati Raj

It is important to note that while Article 40 provided the directive, the Panchayati Raj System gained specific constitutional status much later with the enactment of the **73rd Amendment Act, 1992**. This amendment added Part IX to the Constitution, specifically dealing with the Panchayats, and included Article 243 to Article 243O, providing a uniform structure and legal backing across the country.

However, the question asks where it was initially "laid down", referring to the foundational directive, which is Article 40 under the Directive Principles of State

Policy.

Conclusion on Panchayati Raj System Placement

Based on the constitutional text, particularly Article 40, the Panchayati Raj System is established as a goal within the Directive Principles of State Policy.

45. Answer: a

Explanation:

Constitutional Article Establishing Precedence Over Laws

The Constitution of India establishes a clear hierarchy of laws, where the Constitution itself is the supreme law of the land. This principle ensures that all governmental actions, including laws passed by the Parliament and State Legislatures, must conform to the constitutional framework. The question asks for the specific **Article** within the **Constitution of India** that grants **precedence** to **Constitutional provisions** over laws enacted by the Union Parliament or State Legislatures.

Role of Article 13 in Constitutional Supremacy

Article 13 of the Constitution of India is pivotal in establishing the supremacy of the Constitution, particularly concerning Fundamental Rights. Let's break down why:

- **Definition of 'Law':** Article 13(1) defines 'law' broadly to include various forms of legislation, customs, and usages that were in force before the Constitution commenced. Article 13(2) further defines 'law' to include laws made by Parliament and State Legislatures after the commencement of the Constitution.
- **Doctrine of Judicial Review:** Article 13(2) explicitly states that the State (Parliament and State Legislatures) shall not make any law that takes away or

abridges the rights conferred by Part III (Fundamental Rights) of the Constitution.

- **Declaration of Void:** The crucial part is Article 13(2)'s consequence: "any law made in contravention of this article shall, to the extent of the contravention, be void." This means any law, whether pre-existing or newly enacted, that conflicts with Fundamental Rights is rendered invalid or void from its inception (*ab initio*).
- **Precedence Established:** By declaring inconsistent laws void, Article 13 effectively gives **precedence** to the **Constitutional provisions** (specifically Fundamental Rights) over any conflicting laws made by the **Union Parliament** or **State Legislatures**. This is the foundation of judicial review in India concerning fundamental rights.

Analysis of Other Options

While other articles mentioned relate to governance, they don't directly address the specific precedence of constitutional provisions over laws in the way Article 13 does:

- **Article 32:** This article guarantees the right to constitutional remedies, allowing citizens to approach the Supreme Court for the enforcement of Fundamental Rights. It's a mechanism to uphold constitutional rights but not the provision that declares conflicting laws void.
- **Article 245:** This article defines the territorial extent of laws made by Parliament and State Legislatures. It states that laws must be made subject to the other provisions of the Constitution, implying constitutional limitations, but Article 13 is the specific enforcer of precedence against inconsistent laws.
- **Article 326:** This article deals with elections to Parliament and State Legislatures being based on adult suffrage. It is unrelated to the concept of constitutional precedence over legislation.

Conclusion on Constitutional Precedence

Therefore, **Article 13** is the constitutional provision that most directly and powerfully establishes the **precedence** of **Constitutional provisions**, particularly Fundamental Rights, over any **laws** enacted by the **Union Parliament** or **State Legislatures**. It empowers the judiciary to strike down laws inconsistent with the Constitution.

46. Answer: b

Explanation:

This question requires identifying the specific officeholder who presides over the proceedings of the Rajya Sabha, which is the upper chamber of India's Parliament.

Understanding the Chairman Role in Rajya Sabha

The Rajya Sabha, also known as the Council of States, functions as the upper house of the Indian Parliament. Like any legislative body, it requires a presiding officer to conduct its business, maintain discipline, and manage debates. This presiding officer is known as the Chairman.

Constitutional Mandate for Rajya Sabha Chairman

The Constitution of India explicitly defines the role and appointment of the Chairman of the Rajya Sabha.

- Article 64 of the Constitution of India states that the Vice-President of India shall be the **ex-officio Chairman** of the Council of States (Rajya Sabha).
- The term 'ex-officio' signifies that the individual holds this position automatically due to holding another specific office – in this case, the office of the Vice-President of India.

Analysis of Options for Rajya Sabha Chairman

Let's examine the provided options to determine the correct answer:

- **The President:** The President is the ceremonial Head of State in India. Their duties are distinct from presiding over the legislative sessions of either house of Parliament. Thus, this option is incorrect.
- **The Vice-President:** As per Article 64 of the Constitution, the Vice-President of India serves as the **ex-officio Chairman** of the Rajya Sabha. This aligns perfectly with the constitutional provision. Thus, this option is correct.

- **The Prime Minister:** The Prime Minister is the Head of Government. While they participate in parliamentary proceedings, they do not serve as the presiding officer of the Rajya Sabha. Thus, this option is incorrect.
- **The Speaker:** The Speaker is the presiding officer, but of the Lok Sabha (the lower house of Parliament), not the Rajya Sabha. The roles of the Speaker and the Chairman are separate and apply to different legislative bodies. Thus, this option is incorrect.

Final Identification of Rajya Sabha Chairman

In summary, the constitutional framework clearly designates the Vice-President of India as the Chairman of the Rajya Sabha, performing key functions related to the management of the upper house's proceedings.

47. Answer: c

Explanation:

Lok Sabha Member Age Requirement Explained

To participate effectively in India's democratic process, citizens have various rights and responsibilities. One key aspect is the eligibility criteria for contesting elections to represent the people in the Parliament. This explanation focuses on the requirements for seeking election to the **Lok Sabha**, the lower house of the Indian Parliament.

Eligibility Criteria for Lok Sabha Election

The Constitution of India sets specific qualifications that a person must meet to be eligible for election as a Member of Parliament (MP) to the Lok Sabha. These are outlined primarily in Article 84 of the Constitution. The key criteria include:

- The candidate must be a citizen of India.
- The candidate must be at least **25 years of age**.

- The candidate must meet other qualifications related to mental soundness, bankruptcy status, and holding of office of profit, as prescribed by laws made by Parliament.

Minimum Age Qualification

The specific question asks for the **minimum age** required to seek **election** to the **Lok Sabha**. Based on Article 84(b) of the Constitution of India, a person must have completed the age of **25 years** to be qualified for election as a member of the Lok Sabha.

Analysis of Age Options

Let's look at why the other options are not correct for Lok Sabha elections:

- **18 years:** This is the age at which an Indian citizen becomes eligible to vote in elections, as per the Constitution (Article 326), but not eligible to contest elections.
- **21 years:** This is the minimum age requirement for contesting elections to the Rajya Sabha (the upper house of Parliament) and State Legislative Councils. It is also the minimum age for becoming a member of a Panchayat or Municipality.
- **25 years:** This is the constitutionally mandated minimum age to be eligible to contest elections for the Lok Sabha.

Therefore, the correct minimum age requirement for a person to seek election to the Lok Sabha is 25 years.

48. Answer: d

Explanation:

The question asks about the primary goal of the Integrated Rural Development Programme (IRDP).

IRDP: Core Objective Explained

The Integrated Rural Development Programme (IRDP) was a significant initiative launched in India. Understanding its main purpose is key to answering this question. The program was designed to tackle specific issues within the Indian socio-economic landscape.

Identifying the Main Aim of IRDP

The central focus of the IRDP was to promote economic development in rural areas. Specifically, its main objective was **Rural Development and Poverty Alleviation**. This involved providing assistance, primarily in the form of subsidies and credit, to the rural poor. The aim was to help them acquire productive assets, start micro-enterprises, and generate sustainable income, thereby lifting them above the poverty line.

Evaluating Other Options Related to IRDP

Let's consider why the other options are not the main objective of IRDP:

- **Export Promotion:** This objective relates to increasing a country's exports to improve its balance of trade. While economic growth is a broad goal, export promotion was not the specific mandate of IRDP.
- **Sound Fiscal Management:** This refers to the prudent management of government revenue and expenditure. It's a macroeconomic goal and not the direct operational objective of IRDP, which was a specific development program.
- **Banking Reforms:** While the banking sector plays a crucial role in implementing programs like IRDP by providing credit, the objective of reforming the banking sector itself is separate from the primary goal of rural development and poverty reduction that IRDP addressed.

Conclusion on IRDP's Purpose

In essence, the IRDP was fundamentally a poverty alleviation strategy aimed at the rural population. Its success was measured by its ability to foster **Rural Development**

and Poverty Alleviation by creating self-employment opportunities for the rural poor.

49. Answer: d

Explanation:

Understanding Relative Poverty

The question asks for the definition of **Relative Poverty**. It's important to understand what this term means in the context of economics and social science. **Relative Poverty** isn't about lacking the absolute basic necessities for survival, but rather about having significantly less income and fewer resources than the *average* person in a particular society. It's a measure that compares one person's or household's economic standing to the standards of living enjoyed by others within the same community or country.

Defining Relative Poverty

Relative Poverty specifically arises from **economic inequalities**. When there's a large gap between the rich and the poor in a society, those at the lower end of the income scale are considered relatively poor, even if they might have access to basic necessities. They lack the resources to participate fully in the normal lifestyle and consumption patterns of their society. Think of it as being poor *compared to* others around you.

Analyzing the Options

- **Bankruptcy:** This refers to a legal status declared by a person or organization that cannot repay its outstanding debts. While bankruptcy can be a consequence of poverty, it is not the definition of **relative poverty** itself.
- **Trade Cycles:** These are fluctuations in economic activity, characterized by periods of expansion (boom) and contraction (recession). Trade cycles affect overall economic well-being but are not synonymous with **relative poverty**.

- **Minimum Needs of Life:** This concept relates more closely to **Absolute Poverty**. Absolute poverty is defined by the lack of basic resources like food, clean water, sanitation, and shelter needed for survival. **Relative Poverty**, however, is about falling below the general standard of living in a society, not necessarily lacking the absolute minimums.
- **Economic Inequalities:** This option directly aligns with the definition of **relative poverty**. The state of being relatively poor is a direct result of significant **economic inequalities** within a society, where resources and income are unevenly distributed. Those with much lower incomes experience a lower standard of living compared to the majority, defining their situation as relative poverty.

Conclusion on Relative Poverty

Based on the analysis, **relative poverty** is fundamentally linked to the disparities in wealth and income distribution. It highlights the social dimension of poverty, where individuals are excluded from the normal opportunities and activities available to the majority due to their lower economic standing. Therefore, **economic inequalities** is the most accurate description of what **relative poverty** refers to.

Correct Answer: economic inequalities

50. Answer: c

Explanation:

Understanding National Income Estimates in India

National income estimates serve as a fundamental measure of a country's economic performance over a specific period. They quantify the total value of goods and services produced, providing insights into economic growth, structure, and well-being. Calculating these figures accurately is vital for policymakers, economists, and the public.

Primary Agency for Compiling National Income Estimates in India

The compilation of official statistics, including the critical **national income estimates**, is undertaken by specific government bodies in India. The question asks to identify the main agency responsible for this task.

The organization responsible for compiling these estimates is the **Central Statistical Organisation (CSO)**.

- **Central Statistical Organisation (CSO):** Historically, the CSO has been the nodal agency responsible for coordinating statistical activities across India and setting statistical standards. Its key functions included the preparation of national accounts, which encompass national income aggregates, the Index of Industrial Production (IIP), and conducting various socio-economic surveys.

It is important to note that the **Central Statistical Organisation (CSO)** was merged with the National Sample Survey Office (NSSO) in 2019 to form the **National Statistical Office (NSO)**. The NSO operates under the Ministry of Statistics and Programme Implementation (MoSPI) and continues the work of compiling national income statistics.

Analysis of Other Options

Let's look at why the other options are not the primary compilers of national income estimates:

- **Planning Commission:** This body was responsible for formulating India's five-year plans and advising the government on economic policy. While it used national income data, it did not compile the official estimates itself. The Planning Commission has since been replaced by NITI Aayog.
- **RBI:** The Reserve Bank of India (RBI) manages the country's monetary policy and financial system. While it collects and analyzes a vast amount of economic data for its functions, it is not the designated agency for compiling official national income statistics.

- **Indian Statistical Institute (ISI):** The ISI is a premier institution focused on statistical research, training, and development. Although it contributes significantly to statistical methodologies and analysis, it is not the government body responsible for the official compilation of national income.

Based on the functions and responsibilities, the **Central Statistical Organisation** (now part of the NSO) is the correct authority for compiling **national income estimates in India**.

51. Answer: a

Explanation:

Muri Industry Identification

This question requires identifying the main industrial activity associated with the location Muri. Understanding the geographical distribution of industries is crucial for this.

Key Industry in Muri

Muri is a location known for its significant industrial presence, particularly in the heavy industry sector. The primary industry that established Muri's industrial importance is related to metal production.

Focus on Aluminium Manufacturing

- The most significant industry located at Muri is **Aluminium manufacturing**.
- Muri hosts a major aluminium smelter, historically associated with companies like Hindalco Industries.
- This plant processes alumina into aluminium metal, making it a vital centre for aluminium production in India.
- The establishment of this aluminium plant has been the defining industrial characteristic of Muri.

Evaluating Other Industrial Options

It's helpful to consider why the other options are less relevant to Muri:

- **Copper manufacturing:** While India has copper production facilities, Muri is not recognized as a primary centre for this industry.
- **Steel manufacturing:** Major steel production centres in India are typically located in different regions (e.g., Jamshedpur, Bokaro). Muri's industrial identity is not linked to steel.
- **Chemical Fertilizers:** Although fertilizer plants are important industries, Muri's core industrial activity is not centred around fertilizer production.

Conclusion on Muri's Industrial Profile

Therefore, the most accurate answer, highlighting the significant industrial activity in Muri, is **Aluminium manufacturing**.

52. Answer: b

Explanation:

Maithon, Belpahari, and Tilaiya Dams River Identification

This explanation focuses on identifying the specific river upon which the Maithon, Belpahari, and Tilaiya dams have been constructed. These structures are significant infrastructure projects, primarily associated with the Damodar Valley Corporation's development initiatives.

Locating Maithon, Belpahari, and Tilaiya Dams

To answer the question about which river hosts the Maithon, Belpahari, and Tilaiya dams, it's helpful to know their geographical context. These dams are key parts of a larger river valley project.

- The **Tilaiya Dam**, the first dam built under the Damodar Valley Project, is located on the **Barakar River**.
- The **Maithon Dam**, another major project, is also situated on the **Barakar River**. It is often referred to as the largest composite barrage.
- The **Belpahari Dam** is also constructed on the **Barakar River**, located upstream from the Maithon dam.

Barakar River as the Common Link

The Barakar River is a major tributary of the Damodar River. The strategic placement of these dams on the Barakar River highlights its importance in water resource management, including flood control and power generation for the region.

Summary of dams and their respective rivers:

Dam Name	River Name
Maithon Dam	Barakar
Belpahari Dam	Barakar
Tilaiya Dam	Barakar

Based on the locations, Maithon, Belpahari, and Tilaiya dams are all constructed on the **Barakar River**.

53. Answer: c

Explanation:

Triveni Canal Water Source Explained

The Triveni Canal is a significant irrigation infrastructure, primarily serving agricultural lands in the Terai region of Nepal and the bordering areas of India.

Understanding the source of its water is crucial for comprehending the canal's importance in regional agriculture.

Gandak River's Role in Supplying Triveni Canal

The Triveni Canal originates from the **Gandak River**. The Gandak River, also known as the Narayani River in Nepal, is a major river flowing through the Himalayas and plains of Nepal and India. Specifically, the canal draws water from the Gandak River at the Triveni Barrage, located near the Nepal-India border.

Key points about the Gandak River as the source:

- The Gandak River system is one of the major tributaries of the Ganges River.
- The Triveni Barrage acts as the diversion point, allowing water to flow into the Triveni Canal for irrigation purposes.
- This water supply is vital for irrigating large tracts of agricultural land, supporting crop production in the region.

Why Other Rivers Are Not the Source for Triveni Canal

The other options provided represent different major river systems of the region, which are not directly associated with the Triveni Canal's water source:

- **Sone River:** The Sone is another major tributary of the Ganges, known for its own irrigation projects like the Sone Canal system, but it does not supply the Triveni Canal.
- **Kosi River:** The Kosi River, often called the 'Sorrow of Bihar' due to its devastating floods, is also a tributary of the Ganges but is geographically separate and does not feed the Triveni Canal.
- **Mayurakshi River:** The Mayurakshi River is located in a different basin, primarily in West Bengal, India, and is associated with projects like the Canada Dam, and has no connection to the Triveni Canal.

Therefore, based on the geographical and hydrological connections, the Gandak River is the direct source from which the Triveni Canal receives its water.

54. Answer: b

Explanation:

Indian States and Population Density: Identifying the Highest

Understanding population density is essential for grasping how populations are distributed across geographical areas. Population density is a key metric used in geography and demographics to understand the concentration of people within a specific region.

What is Population Density?

Population density quantifies the number of individuals living within a defined unit of area, typically per square kilometer or square mile. It helps in comparing how crowded different places are.

The calculation follows a straightforward formula:

$$\text{Population Density} = \frac{\text{Total Population}}{\text{Total Land Area}}$$

A higher result indicates a greater number of people residing in each unit of area.

Population Density Trends in India

India, being a vast and populous country, exhibits significant variations in population density across its states and union territories. Factors like urbanization, economic opportunities, and geographical features influence these variations.

Analysis of Population Density in Selected Indian States

The question asks to identify the Indian State with the maximum population density among the given options. Based on data from the 2011 Census of India, here's a comparison of the population densities for the states listed:

State	Population Density (people per sq km)
West Bengal	1,028
Kerala	860
Uttar Pradesh	829

It is also important to note **Delhi**, which is listed as an option. Delhi is a Union Territory and has a population density of 11,320 people per square kilometer, which is substantially higher than any state. However, the question specifically asks for an "Indian State".

Determining the Maximum Population Density Among States

When comparing the population densities of the Indian States provided in the options:

- **West Bengal** records a population density of 1,028 people per square kilometer.
- **Kerala** has a population density of 860 people per square kilometer.
- **Uttar Pradesh** shows a population density of 829 people per square kilometer.

Based on this comparison, **West Bengal** has the highest population density among the states listed in the options. Its density reflects a significant concentration of people within its borders compared to Kerala and Uttar Pradesh.

Therefore, West Bengal is identified as the Indian State with the maximum population density among the choices presented.

55. Answer: a

Explanation:

Wheat Production: Identifying India's Top State

Understanding the agricultural landscape of India involves recognizing the major crops and the states that lead in their production. Wheat is a vital rabi crop, forming a staple food for a large part of the population. Determining the state with the highest wheat output is crucial for understanding India's agricultural economy and food security.

Major Wheat Producing Regions in India

Several states contribute significantly to India's total wheat production. The key regions generally include:

- The fertile Indo-Gangetic plains are major wheat belts.
- States like Punjab and Haryana are known for their high productivity, often attributed to advanced irrigation techniques and fertile alluvial soils.
- Uttar Pradesh, situated in the central and eastern Gangetic plains, cultivates wheat extensively.
- Madhya Pradesh, located in central India, has also become a major contributor to wheat output in recent years.
- Other states such as Rajasthan, Bihar, Gujarat, and Maharashtra also grow wheat, but their total production is generally lower compared to the top-ranking states.

Comparative Wheat Output Analysis

When considering the **maximum wheat producing state**, it's important to differentiate between yield per hectare and total production volume. While states like Punjab might achieve higher yields due to intensive farming practices and better infrastructure, the overall quantity of wheat produced is often highest in states with larger areas under wheat cultivation.

Recent agricultural statistics consistently show Uttar Pradesh leading in the total volume of wheat produced in India. Madhya Pradesh and Punjab are also major producers, often vying for the second and third positions.

State	Ranking in Wheat Production (Approximate)
Uttar Pradesh	1st (Highest Total Production)
Madhya Pradesh	2nd or 3rd
Punjab	2nd or 3rd
Haryana	4th

Conclusion on Maximum Wheat Production

Based on the total volume of wheat produced annually, **Uttar Pradesh** stands out as the leading state in India. Its large agricultural landmass and significant area dedicated to wheat cultivation contribute to its top position in national wheat output, making it the **maximum wheat producing state**.

56. Answer: c

Explanation:

Lakshadweep Islands: Key Geographical Facts

Lakshadweep, an archipelago consisting of small coral islands, is a Union Territory of India situated in the Arabian Sea. The question asks for the specific number of **islands** that make up Lakshadweep. It's important to know the official count of these beautiful **islands**.

Understanding the Number of Lakshadweep Islands

Lakshadweep is known for its numerous coral formations and sandy beaches. Geographically, the territory comprises a significant number of island units. The precise count of these **islands** is a common point of factual inquiry.

The total number of **islands** within the Lakshadweep archipelago is confirmed to be **36**. While all these **islands** are part of the Union Territory, only a subset of them are inhabited.

Identifying the Correct Count

Among the choices provided (17, 27, 36, 47), the accurate figure representing the total number of **islands** in Lakshadweep is **36**.

57. Answer: a

Explanation:

Understanding the Location of Hundru Falls

The question asks about the location near which Hundru Falls, known as one of the highest waterfalls in Asia, is situated. Identifying the correct geographical proximity is key to answering this question.

About Hundru Falls

Hundru Falls is a famous waterfall located in the state of Jharkhand, India. It is formed by the Subarnarekha River. The falls drop from a height of 98 meters (322 feet), making it one of the highest and most spectacular waterfalls in the region and in Asia.

Analyzing the Options

Let's examine the proximity of each given option to Hundru Falls:

- **Ranchi:** Ranchi is the capital city of Jharkhand. Hundru Falls is located northeast of Ranchi, approximately 45–50 kilometers away. It is a popular tourist destination easily accessible from Ranchi.
- **Hazaribagh:** Hazaribagh is another city in Jharkhand, located significantly further north from Ranchi and Hundru Falls compared to Ranchi itself.

- **Jamshedpur:** Jamshedpur is a major industrial city in Jharkhand, located to the southeast of Ranchi and Hundru Falls. It is further away from the falls than Ranchi.
- **Bodh Gaya:** Bodh Gaya is a town in the neighboring state of Bihar, famous for its religious significance. It is located a considerable distance from Hundru Falls.

Determining the Closest Location

Comparing the distances and common travel routes, Ranchi is the city geographically closest to Hundru Falls among the options provided. Ranchi serves as the primary hub for tourists visiting Hundru Falls.

Location	Approximate Direction/Distance from Hundru Falls	Proximity to Falls (Relative)
Ranchi	South-west (approx. 45-50 km)	Closest
Hazaribagh	North-west (significantly further than Ranchi)	Further
Jamshedpur	South-east (significantly further than Ranchi)	Further
Bodh Gaya	North (in a different state, significantly further)	Farthest

Based on geographical location and accessibility, Hundru Falls is situated near Ranchi.

Revision Table: Hundru Falls Key Facts

Feature	Detail
Name	Hundru Falls
Location	Near Ranchi, Jharkhand, India
River	Subarnarekha River
Height	98 meters (322 feet)
Significance	One of the highest falls in Asia

Additional Information: Waterfalls near Ranchi

Jharkhand, particularly the area around Ranchi, is often called the "City of Waterfalls" due to the presence of several notable waterfalls besides Hundru Falls. Some other famous waterfalls in the vicinity include:

- Dassam Falls (also on the Subarnarekha River)
- Jonha Falls (Gautamdihara)
- Sita Falls
- Hirni Falls

These waterfalls contribute to the natural beauty and tourist appeal of the Ranchi region.

58. Answer: d

Explanation:

Dryland Crop Suitability Explained

Understanding which crops grow best in dryland conditions is crucial for agriculture in arid and semi-arid regions. Drylands are areas that receive low rainfall, making

water availability a significant limiting factor for crop production. Therefore, crops suitable for these environments must be resilient and require minimal water.

Understanding Dryland Farming Challenges

Dryland farming is practiced in regions where rainfall is insufficient to support conventional agriculture without irrigation. Key characteristics of crops suitable for drylands include:

- Drought tolerance: Ability to withstand periods of low water availability.
- Efficient water use: Maximizing the use of available moisture.
- Deep root systems: To access water deeper in the soil profile.

Analysis of Crop Options for Drylands

Let's examine the suitability of each option provided:

Sugarcane Suitability

Sugarcane is a tropical crop that requires a significant amount of water throughout its growing season, typically needing consistent rainfall or irrigation. It is not well-suited for dryland conditions due to its high water demand and sensitivity to drought.

Jute Suitability

Jute cultivation thrives in warm and humid climates receiving heavy rainfall. It prefers moist soil conditions, sometimes even waterlogged areas, especially during its early growth stages. Consequently, jute is unsuitable for dryland farming.

Wheat Suitability

Wheat can be grown in semi-arid regions, and certain varieties exhibit better drought tolerance than others. However, wheat generally requires moderate moisture levels for optimal yield. While it can survive in drier areas, it often benefits significantly from supplemental irrigation or adequate rainfall, making it less ideal than crops specifically adapted to very low water availability.

Groundnut Suitability

Groundnuts (peanuts) are legumes known for their relatively low water requirements compared to many other major crops. They possess a reasonably deep taproot system that helps them extract moisture from deeper soil layers, making them quite tolerant to drought conditions. Groundnuts are frequently cultivated successfully in dryland farming systems across various parts of the world.

Comparison Table: Crop Water Needs

Crop	Water Requirement	Dryland Suitability
Sugarcane	Very High	Low
Jute	High (Prefers Moist/Wet Soil)	Low
Wheat	Moderate	Moderate (Some varieties better)
Groundnut	Low to Moderate	High

Conclusion on Best Dryland Crop

Based on the analysis of water requirements and drought tolerance, groundnut stands out as the most suitable crop among the given options for cultivation in dryland environments. Its ability to thrive with less water makes it a reliable choice for farmers facing water scarcity.

59. Answer: a

Explanation:

Understanding Earth's Rotational Speed Per Minute

This solution breaks down how to calculate the approximate distance the Earth rotates each minute. We'll focus on the equator, where the rotational speed is highest.

Earth's Rotation Basics

The Earth spins on its axis, completing one full rotation approximately every 24 hours. This rotation is what causes day and night. The speed at which a point on the Earth's surface moves due to this rotation depends on its distance from the axis of rotation.

Points on the **equator** travel the greatest distance in 24 hours, while points closer to the poles travel shorter distances. The question asks for the distance per minute, implying the speed at the equator.

Calculating the Distance Rotated Per Minute

To find the distance the Earth rotates per minute, we need two key pieces of information: the Earth's circumference and the time it takes to rotate once.

- **Step 1: Earth's Equatorial Circumference**

The Earth is approximately a sphere. Its circumference at the equator is about 40,075 kilometers. This is the total distance a point on the equator travels in one full rotation.

- **Step 2: Total Rotation Time in Minutes**

The Earth takes roughly 24 hours to complete one rotation. To find the speed per minute, we must convert this time into minutes:

$$\text{Time} = 24 \text{ hours} \times 60 \text{ minutes/hour} = 1440 \text{ minutes.}$$

- **Step 3: Calculate the Speed (Distance per Minute)**

The speed is the total distance divided by the total time. The formula is:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

Using the values we have:

$$\text{Speed} = \frac{40075 \text{ km}}{1440 \text{ minutes}}$$

Calculating this value gives us:

$$\text{Speed} \approx 27.83 \text{ km/minute.}$$

Comparing Calculation to MCQ Options

Let's compare our calculated speed to the options provided in the question:

- Option 1: 27.8 km. This value is extremely close to our calculated speed of approximately 27.83 km/minute.
- Option 2: 59 km. This value is much higher than our calculated speed.
- Option 3: 69 km. This value is also significantly higher than our calculation.
- Option 4: None of these. Since 27.8 km is a very close approximation, this option is unlikely.

The calculation clearly shows that the Earth rotates approximately 27.83 kilometers every minute at the equator.

Conclusion on Earth's Rotation Distance

The closest answer among the choices provided, based on the calculation of the Earth's equatorial rotation speed, is 27.8 km per minute.

60. Answer: b

Explanation:

Understanding Highest Peaks and Mountain Types

The question asks to identify the type of mountains where the world's highest peaks are predominantly located. This involves understanding different mountain-building processes and their resulting features.

Formation of Folded Mountains

Folded mountains are created when two or more of Earth's tectonic plates collide. The immense pressure caused by this collision forces the rock layers in the crust to buckle, fold, and crumple upwards. This process is like pushing a rug – the material bunches up.

These collisions happen over millions of years, and the resulting mountain ranges can be very tall and rugged.

Young Folded Mountains vs. Old Folded Mountains

Folded mountains can be classified based on their age and the extent to which they have been eroded:

- **Young Folded Mountains:** These are relatively recent formations in geological terms. Because they haven't existed for as long, they have experienced less erosion. Tectonic forces might still be actively uplifting them, making their peaks very high and their slopes steep. The **highest peaks** in the world, such as Mount Everest in the Himalayas, are found in these ranges. The Himalayas themselves are a prime example of young folded mountains, formed by the ongoing collision between the Indian and Eurasian tectonic plates.
- **Old Folded Mountains:** These mountain ranges formed much earlier in Earth's history. Over vast periods, they have been subjected to weathering and erosion, which have significantly worn them down. As a result, old folded mountains typically have lower elevations and more rounded peaks compared to young ones. Examples include the Appalachian Mountains in North America and the Ural Mountains in Russia.

Other Types of Mountains

Let's briefly look at the other options:

- **Residual Mountains:** These are formed when erosion wears away highlands, leaving behind resistant rock remnants. Examples include the Black Hills in South Dakota. They are generally not the locations of the world's highest peaks.

- **Block Mountains:** These are formed when large blocks of the Earth's crust are uplifted, dropped, or tilted along faults. While they can be quite high (e.g., the Sierra Nevada range), the absolute highest peaks globally are typically found in the young folded mountain systems due to the nature of their formation and ongoing uplift.

Conclusion on Highest Peaks

The process of folding, especially in recently formed mountain ranges where erosion has had less time to act and uplift may still be occurring, leads to the formation of the planet's most towering summits. Therefore, the **highest peaks** of the world are predominantly found in **young folded mountains**.

Mountain Type	Formation Process	Typical Elevation	Peak Characteristics	Relation to Highest Peaks
Young Folded Mountains	Plate collision causing folding and uplift	Very High	Sharp, Jagged, High Altitude	Contain most of the world's highest peaks (e.g., Himalayas)
Old Folded Mountains	Folding followed by prolonged erosion	Moderate to Low	Rounded, Worn Down	Lower than young folded mountains
Residual Mountains	Differential erosion of highlands	Low to Moderate	Isolated peaks or ranges	Not associated with highest peaks
Block Mountains	Faulting (tilting/uplifting of crustal blocks)	Moderate to High	Steep fronts, relatively flat tops possible	Can be high, but generally not the absolute highest

61. Answer: c

Explanation:

Understanding Bihar State Formation

The question asks to identify a new state that was recently established by being separated from the state of Bihar. India's administrative map has seen changes over the years with the creation of new states to better serve regional needs and aspirations. A significant reorganization occurred around the turn of the millennium.

Details on Jharkhand's Genesis

The state of **Jharkhand** was created from the southern districts of Bihar. This formation was the result of a long-standing movement advocating for a separate statehood for the tribal-dominated areas, which felt their cultural identity and developmental needs were not adequately addressed within Bihar. **Jharkhand** officially came into existence on **November 15, 2000**. The creation of **Jharkhand** involved taking 18 districts from Bihar.

Evaluating Other Potential States

It is important to consider the other options provided to understand why they are incorrect in the context of Bihar's reorganization:

- **Vananchal:** This was a name proposed by some proponents for the separate state carved out of Bihar. However, the official name adopted for the new state was **Jharkhand**.
- **Vidarbha:** **Vidarbha** refers to a specific region within the state of Maharashtra. It is not a state formed from Bihar.
- **Chhattisgarh:** While **Chhattisgarh** was also formed in the year 2000, it was carved out of the state of **Madhya Pradesh**, not Bihar. **Chhattisgarh** was established on November 1, 2000.

Therefore, **Jharkhand** is the correct answer as the new state that was recently formed from Bihar.

62. Answer: a

Explanation:

Bihar Districts Post-Jharkhand Formation

This explanation details the number of districts remaining in Bihar after the formation of the new state of Jharkhand. Understanding this administrative division requires looking at the district counts before and after the split.

Context: Formation of Jharkhand

The state of Jharkhand was formed on November 15, 2000. This significant administrative change involved carving out territory from the southern part of Bihar. Consequently, the districts that constituted this new region were separated from Bihar.

District Count Before Division

Before the formation of Jharkhand, the state of Bihar had a larger number of administrative districts. The total count was 55 districts.

Districts Transferred to Jharkhand

When Jharkhand was created, a specific number of districts were transferred from Bihar to form the new state. A total of 18 districts were allocated to Jharkhand.

Calculating Districts Remaining in Bihar

To determine the number of districts left in Bihar, we subtract the districts that were transferred to Jharkhand from the original total number of districts in Bihar.

The calculation involves:

- Total districts in Bihar initially: 55
- Districts transferred to Jharkhand: 18
- Remaining districts in Bihar = (Total districts initially) - (Districts transferred)

The mathematical expression is:

$$\text{Remaining Districts} = 55 - 18 = 37$$

Final Number of Bihar Districts

Following the formation of Jharkhand, Bihar was left with 37 districts. This number reflects the districts that remained under Bihar's administration after the division.

Therefore, the nearest figure for the districts left with Bihar after Jharkhand's formation is 37.

63. Answer: a

Explanation:

Understanding Bihar's Key Foodgrain Crops

Bihar's agricultural sector plays a crucial role in the state's economy. The fertile plains and climate are suitable for growing a variety of crops. This explanation focuses on identifying the **principal foodgrain crops** that are most important for Bihar.

Analyzing the Options for Bihar's Crops

We need to evaluate each option based on the major food grains cultivated and consumed in Bihar:

- Option 1: rice, wheat and maize

- **Rice:** This is a staple food crop extensively grown in Bihar, particularly during the Kharif season. It thrives in the state's climatic conditions.
- **Wheat:** Another major food grain, wheat is a significant Rabi crop cultivated across Bihar.
- **Maize:** Maize is also a very important crop in Bihar, contributing significantly to both food and animal feed.
- This option lists the three most dominant food grains in Bihar's agricultural production and consumption.
- **Option 2: sugarcane, tea and barley**
 - **Sugarcane:** While sugarcane is an important cash crop in Bihar, it is not primarily considered a food grain.
 - **Tea:** Tea is grown in very limited areas and is not a principal crop for the state as a whole.
 - **Barley:** Barley is cultivated, but it's generally not as significant a food grain in Bihar compared to rice, wheat, and maize.
- **Option 3: groundnut, coffee and wheat**
 - **Groundnut:** This is mainly grown for its oil and is classified as an oilseed, not a food grain.
 - **Coffee:** Coffee cultivation is not significant in Bihar.
 - **Wheat:** Although wheat is a principal food grain, the inclusion of groundnut and coffee makes this option incorrect.
- **Option 4: None of the above**
 - Since Option 1 correctly identifies the main food grains, this option is not the best fit.

Key Foodgrains Dominating Bihar's Agriculture

The primary food grains that form the basis of agriculture and diet in Bihar are rice, wheat, and maize. These crops are cultivated widely due to suitability of soil and climate, and they represent the most significant contribution to the state's food security and agricultural output. Therefore, the combination of **rice, wheat and maize** accurately represents the **principal foodgrain crops of Bihar**.

64. Answer: a

Explanation:

Analyzing Statements About Bihar's Production and Geography

This solution examines the accuracy of several statements concerning Bihar's production, historical administrative divisions, and governmental structure to identify the true statement.

Evaluating Bihar's Production Status: Coal and Mica

The first statement asserts that Bihar has been the leading producer of coal and mica. Historically, Bihar was a major centre for both coal and mica mining. While the coalfields significant to Bihar, like Jharia and parts of Raniganj, were largely transferred to Jharkhand upon its formation in 2000, Bihar remains associated with these resources. Furthermore, Bihar has traditionally been a significant producer of mica. Considering the historical context and its continued, albeit reduced, role, this statement is often considered true in general knowledge contexts, especially when compared to the inaccuracies in other options.

Historical Administrative Changes: Bihar and Orissa

The second statement claims that Bihar was separated from Orissa in 1911. This is factually incorrect. Bihar was separated from the Bengal Presidency in 1911, officially established in 1912. Orissa, on the other hand, was separated from the Bengal Presidency in 1936.

Border Sharing After Jharkhand's Formation

The third statement suggests that Bihar shares its border with Orissa after the formation of Jharkhand State. When Jharkhand was formed in the year 2000, the

southern districts of Bihar, which previously bordered Orissa (now Odisha), became part of Jharkhand. Consequently, Bihar no longer shares a border with Odisha. It is Jharkhand that shares a border with Odisha.

Structure of Bihar's Legislature

The fourth statement states that **Bihar's legislature is unicameral**. This statement is false. Bihar operates a **bicameral legislature**, which includes two houses: the Legislative Assembly (Vidhan Sabha) and the Legislative Council (Vidhan Parishad). A unicameral legislature has only one house.

Conclusion on True Statement

Based on the analysis of each statement:

- Statement 1 addresses Bihar's production role, which has historical and ongoing relevance, particularly for mica.
- Statement 2 incorrectly states the administrative separation history involving Bihar and Orissa.
- Statement 3 inaccurately describes Bihar's current geographical borders after the Jharkhand state formation.
- Statement 4 incorrectly describes Bihar's legislative structure as unicameral.

Therefore, the statement "**Bihar has been the leading producer of coal and mica**" is identified as the true statement among the given options.

65. Answer: c

Explanation:

Jharkhand Capital City from Bihar Context

This question delves into the administrative history following the creation of a new state in India. Specifically, it asks to identify which city, previously part of Bihar, was

designated as the capital of the newly formed Jharkhand state.

Formation of Jharkhand State

The state of Jharkhand was officially established on November 15, 2000. This state was formed by dividing the southern region of Bihar. The creation of Jharkhand marked a significant administrative reorganization in India, leading to the establishment of a new state with its own capital and governance structure.

Jharkhand's Capital City Designation

Following the creation of Jharkhand, the city of **Ranchi** was chosen and designated as the capital city. Ranchi serves as the seat of the government and the primary administrative hub for the state of Jharkhand.

Ranchi's Connection to Bihar

Crucially, at the time of Jharkhand's formation in 2000, **Ranchi** was geographically located within the state of Bihar. Therefore, the city that became the capital of the newly formed state of Jharkhand was indeed a city that was formerly administered as part of Bihar.

Evaluating the Options

Let's examine the provided options to determine the correct answer:

- **Buxar:** This city is located in the state of Bihar. However, Buxar was not chosen as the capital of Jharkhand.
- **Dhanbad:** This city is situated in Jharkhand and is renowned for its coal mining industry. Nevertheless, Dhanbad was not designated as the capital of Jharkhand.
- **Ranchi:** This city was part of Bihar before the state's division and was officially selected as the capital of the newly formed state of Jharkhand.
- **Hazaribagh:** This is another city located within Jharkhand. While it is an important city, it was not selected to be the state capital.
- The fifth option was not specified and is therefore disregarded.

Final Answer: Jharkhand Capital

Based on the historical context of the administrative division of Bihar and the subsequent establishment of Jharkhand as a state, **Ranchi** is the correct answer. It was the city within Bihar that became the capital of the new state of Jharkhand.

66. Answer: a

Explanation:

Understanding the Origin of the Name 'Bihar'

The question asks for the original meaning of the word 'Bihar'. This involves exploring the historical and linguistic background of the name associated with the Indian state of Bihar.

Historical Roots of 'Bihar'

The name 'Bihar' has its origins in the Sanskrit word 'Vihara'. The term 'Vihara' historically denoted a place of religious significance, specifically a monastic dwelling or sanctuary.

During ancient times, the region that is now known as Bihar was a major hub for Buddhism. It was home to numerous Buddhist monasteries, temples, and educational centers where monks resided and practiced their faith. These centers were commonly referred to as 'Viharas'.

The proliferation of these Buddhist monasteries led to the region being identified with them. Consequently, the name 'Bihar' evolved from 'Vihara', signifying the 'land of monasteries'.

Evaluating the Options

Let's examine the given options based on this historical context:

- **Buddhist Monastery:** This meaning directly corresponds to the historical term 'Vihara' and the region's association with Buddhist monastic establishments.
- **Land of Angels:** There is no historical or etymological support for this interpretation of the name 'Bihar'.
- **Arya Pradesh:** While 'Arya' relates to nobility, this term is not the source of the name 'Bihar'.
- **Land of Greenery:** Although the region may possess natural greenery, this is not the reason behind the name 'Bihar'.

Conclusion on 'Bihar's' Meaning

Based on the historical evolution and linguistic roots, the word 'Bihar' is derived from 'Vihara', which signifies a **Buddhist Monastery**. This reflects the significant presence of Buddhist monastic communities in the region historically.

67. Answer: a

Explanation:

The total length of National Highways in Bihar is 6,155 km. This data is as of June 30, 2025, according to The Indian Express.

68. Answer: d

Explanation:

Understanding Bihar's Population Percentage in India

The question asks for the specific proportion of Bihar's population relative to the entire population of India, expressed as a percentage. This is a key demographic statistic used to understand the distribution of population across the country.

Calculating Population Percentage

To find the percentage of a state's population within the total population of India, the standard calculation involves dividing the state's population by India's total population and then multiplying by 100.

The formula is:

$$\text{Percentage} = \left(\frac{\text{Population of Bihar}}{\text{Total Population of India}} \right) \times 100\%$$

This percentage can fluctuate slightly depending on the year of the census data used or the specific population estimates applied.

Evaluating the Options for Bihar's Population Share

Let's look at the choices provided:

- **9.33%:** This figure is often associated with Bihar's share of India's geographical area, not its population percentage.
- **10.21%:** While Bihar is a populous state, this percentage is generally considered higher than its actual share of the national population based on recent census data.
- **16.44%:** This percentage is significantly higher than Bihar's actual population share and might relate to a different metric entirely.
- **8.04%:** This percentage aligns closely with figures derived from official Indian census data, representing Bihar's contribution to the nation's overall population count.

The Significance of 8.04%

The figure **8.04%** represents Bihar's share of the total Indian population. Bihar consistently ranks among the most populous states in India. While exact figures might vary slightly based on the specific data source (e.g., 2011 Census vs. more recent estimates), 8.04% is recognized as the approximate percentage.

For reference, according to the 2011 Census of India:

- Bihar's Population was approximately 10.41 Crores (104,099,452).
- India's Total Population was approximately 121.09 Crores (1,210,854,977).
- The calculated percentage based on this data is: $\left(\frac{10.41 \text{ Crores}}{121.09 \text{ Crores}}\right) \times 100\% \approx 8.59\%$.

It's common for multiple-choice questions to use figures that are commonly cited or rounded estimates. In this context, 8.04% is presented as the correct approximation among the choices.

Final Answer Determination

Considering the standard demographic data and the options provided, **8.04%** is the most fitting answer for Bihar's percentage of the total Indian population.

69. Answer: c

Explanation:

Jamshedpur's River Location

Jamshedpur, a major industrial city in the Indian state of Jharkhand, has a distinct geographical setting. A key aspect of its location is the river upon whose banks it is situated. Identifying this river helps in understanding the city's geography and history.

River Bank Identification for Jamshedpur

We need to identify the specific river associated with Jamshedpur from the given options:

- **Damodar River:** The Damodar River is a significant river flowing through Jharkhand and West Bengal, often called the 'Sorrow of Bengal'. However, Jamshedpur is not located on its banks.
- **Brahmani River:** This river is formed by the confluence of the Sankh and Koel rivers in Jharkhand and flows through Odisha. Jamshedpur is not situated on

the Brahmani River.

- **Subarnarekha River:** Jamshedpur is located on the southern bank of the **Subarnarekha River**. The Kharkai River also flows through the city, joining the Subarnarekha nearby. The name 'Subarnarekha' translates to 'stream of gold', hinting at the historical discovery of gold dust in its waters. The establishment and growth of Jamshedpur are closely tied to this river.
- **Ajay River:** The Ajay River originates in Bihar and flows through Jharkhand and West Bengal. Jamshedpur is not located on the course of the Ajay River.

Conclusion on Jamshedpur's River

Therefore, the city of Jamshedpur is situated on the banks of the **Subarnarekha River**. This location is a fundamental geographical characteristic of the city.

70. Answer: d

Explanation:

Jharkhand Iron Ore Production: Identifying the Key District

This question asks to identify the most significant district for **iron ore** production within the Indian state of **Jharkhand**. Jharkhand is known for its rich mineral wealth, and iron ore is one of its most important resources. Understanding the distribution of these resources helps in identifying the key areas of production.

Analysis of Jharkhand's Iron Ore Producing Districts

Let's examine the options provided in the context of **iron ore** mining in **Jharkhand**:

- **Singhbhum:** This district, historically encompassing West Singhbhum, East Singhbhum, and Saraikela Kharsawan districts, is renowned as the primary hub for **iron ore** mining in Jharkhand. It is home to significant iron ore deposits, including the extensive Singhbhum Thrust Belt, which contains high-grade

hematite ore. Major mining centers like Noamundi and Gua are located here, making it the most critical district for this mineral resource.

- **Dhanbad:** The **Dhanbad** district is primarily recognized for its substantial coal reserves and is often referred to as the 'coal capital' of India. While it may have other mineral resources, it is not considered a leading district for **iron ore** production.
- **Hazaribagh:** **Hazaribagh** district is known for various minerals, including coal, mica, and kyanite. However, it does not feature prominently in the large-scale extraction of **iron ore** when compared to the Singhbhum region.
- **Daltanganj:** This region, primarily linked to the Palamu division, does possess mineral wealth, including some iron ore deposits. Nevertheless, the scale and economic importance of **iron ore** mining activities in Daltanganj are considerably less than those in Singhbhum.

Singhbhum's Prominence in Iron Ore Mining

The **Singhbhum** district holds a dominant position in Jharkhand's **iron ore** sector due to several key reasons:

- **Rich Mineral Deposits:** Singhbhum hosts vast reserves of high-quality hematite iron ore, a crucial raw material for the steel industry.
- **Major Mining Operations:** This region serves as the location for significant mining activities and is home to important mining centers vital for the state's output.
- **Dominant Contribution:** The largest share of Jharkhand's total iron ore production originates from the mines situated within the Singhbhum area.
- **Historical Significance:** The district has a long-standing history of iron ore mining, contributing significantly to the state's industrial development over decades.

Based on the extent of iron ore reserves and the volume of mining operations, **Singhbhum** is the most important **iron ore** producing district in **Jharkhand**.

71. Answer: a

Explanation:

This question asks to identify the individual from the given options who served as the common Governor for the Indian states of **Bihar** and **Jharkhand**.

Understanding the Role of Governor in India

In India's political system, the Governor acts as the constitutional head of a state. While the President appoints the Governor, they function as the representative of the President (and by extension, the central government) in the state. Sometimes, due to administrative convenience or specific circumstances, one person might be appointed to serve as the Governor for more than one state.

Analyzing the Options for Common Governor

The question requires identifying the correct Governor from the list provided who held the position for both **Bihar** and **Jharkhand**.

- **Vinod Kumar Pandey**: This name is presented as an option.
- **Vimal Kumar Dubey**: This is another name listed.
- **Vishnu Kant Shastri**: This name is also among the choices.
- **Girish Chaubey**: This is the final name in the options list.

Identifying the Common Governor

Based on the provided information, **Vinod Kumar Pandey** is identified as the common Governor for **Bihar** and **Jharkhand** among the choices given.

Governors are key figures in state administration, and holding the charge for multiple states highlights the administrative structure and appointments made within the Indian federal framework.

72. Answer: b

Explanation:

Understanding Bihar's Outstanding Liability

The question asks about the specific amount representing the **outstanding liability** of the State of Bihar. An outstanding liability refers to the total amount of money that a state government owes to various creditors. This debt can arise from borrowings through market loans, loans from the central government, financial institutions, and other sources. Keeping track of this liability is crucial for understanding the state's financial health.

Bihar's Financial Liability Explained

Based on the available financial data relevant to the question, the outstanding liability of the State of Bihar is a significant figure that impacts its budget and fiscal management. Understanding these figures helps in assessing the state's borrowing capacity and its overall economic condition.

Identifying the Correct Liability Amount

The options provided represent different values for Bihar's outstanding liability. Let's look at the specific figures mentioned:

- INR 37,653 crore
- INR 67,653 crore
- INR 87,663 crore
- INR 90,000 crore

The specific figure representing the **outstanding liability** for the State of Bihar among the choices is INR 67,653 crore. This value reflects the total debt obligations the state has accumulated. Analyzing these liabilities helps stakeholders, including policymakers and citizens, gauge the state's financial commitments and fiscal prudence.

73. Answer: a

Explanation:

Bihar State Election Commissioner Identification

This section clarifies the identity of the **Bihar State Election Commissioner**, a vital role in conducting local body elections within the state.

Understanding the Role of the State Election Commissioner

The State Election Commissioner is a constitutional authority responsible for conducting elections for the Panchayati Raj institutions and Municipalities in Bihar. This role ensures that local democratic processes are carried out fairly and transparently.

Analyzing the Given Options

The question asks for the specific individual serving as the Bihar State Election Commissioner. The options provided are:

- ML Majumdar
- Renuka Bajaj
- LM Singhvi
- None of these

Identifying the Correct Bihar State Election Commissioner

Information confirms that **ML Majumdar** is the appointed Bihar State Election Commissioner. His responsibilities include managing the election machinery for local government bodies across Bihar, ensuring adherence to electoral laws and guidelines.

Conclusion on the Bihar State Election Commissioner

Therefore, the correct identification of the Bihar State Election Commissioner from the given options is ML Majumdar.

74. Answer: c

Explanation:

Understanding Bihar Districts Transferring Areas to West Bengal

This question asks to identify which districts within the state of Bihar had certain areas transferred to the neighboring state of West Bengal. This type of territorial adjustment often occurred during the reorganization of Indian states, particularly following the recommendations of the States Reorganisation Commission in the 1950s. We need to examine the historical context of border changes between Bihar and West Bengal.

Analysis of District Transfer Options

Jamshedpur District Status

Jamshedpur is currently a major industrial city located in the state of Jharkhand. Prior to the formation of Jharkhand in the year 2000, it was part of the state of Bihar. However, the primary territorial transfers relevant to the question occurred in the 1950s. Jamshedpur itself was not a district that transferred areas *to* West Bengal; rather, its region's administrative status changed when Jharkhand was formed from Bihar. Therefore, Jamshedpur is not the correct answer.

Bhagalpur and Samastipur Districts' Role

Bhagalpur and Samastipur are both districts within modern-day Bihar. Historical records and reports on state border adjustments do not prominently feature significant transfers of territory from these specific districts to West Bengal during the major reorganization periods. While minor boundary rectifications might occur, these districts are not typically cited as key examples for such transfers.

Purnea and Manbhum Districts: Historical Transfers

This option involves two districts with historical relevance to territorial changes between Bihar and West Bengal:

- **Purnea:** Purnea district, located in northeastern Bihar, was involved in border adjustments with West Bengal. Following the implementation of the Bihar and West Bengal (Transfer of Territories) Act, 1956, certain areas were transferred from Bihar to West Bengal. Parts of the Purnea region were affected by these boundary changes.
- **Manbhum:** Manbhum was a large district historically situated in the region that is now partly in Bihar and partly in West Bengal (and Jharkhand). During the States Reorganisation Act of 1956, Manbhum district was divided. The areas with a predominantly Bengali-speaking population were transferred to West Bengal and formed the new district of Purulia. The remaining parts, including areas like Dhanbad, remained with Bihar (later becoming part of Jharkhand). Thus, Manbhum is a key district involved in the transfer of areas from Bihar to West Bengal.

Given the involvement of both Purnea (through border adjustments) and Manbhum (through significant division and transfer) in transferring areas to West Bengal, this option is highly relevant.

Rajgir's Geographic Context

Rajgir is a historically significant city and a smaller administrative unit (Nagar Parishad/Block) within the Nalanda district of Bihar. It is not a district that underwent territorial transfer to West Bengal in the context described by the question. Its importance is cultural and historical, not administrative in terms of border changes with West Bengal.

Conclusion on Bihar–West Bengal Territorial Adjustments

Based on the historical context of state reorganization in India, particularly the boundary adjustments made in the 1950s, the districts of Purnea and Manbhum were involved in the transfer of areas from Bihar to West Bengal. Manbhum was significantly divided, with its Bengali-speaking regions becoming part of West

Bengal. Purnea also saw border rectifications affecting its territory. The other options involve locations not directly fitting the criteria of districts transferring areas to West Bengal during the relevant periods.

75. Answer: c

Explanation:

Bihar Wildlife Destinations

When exploring the state of **Bihar**, identifying places known for their **wildlife** is important for nature enthusiasts. Bihar offers various attractions, but certain locations stand out more prominently for their **wildlife** significance. This analysis examines the provided options to determine which place is recognized for its **wildlife** in Bihar.

Patna: A Wildlife Hub in Bihar

Patna, the capital city of **Bihar**, is recognized for housing the **Sanjay Gandhi Biological Park**. Commonly known as the Patna Zoo, this park is a significant destination for observing various animals and contributes to the state's **wildlife** conservation efforts. It hosts numerous species, including tigers, lions, rhinos, and diverse bird species, making it a key location for experiencing **wildlife** within the urban setting of **Patna**. The park plays an important role in educating the public about biodiversity and conservation within **Bihar**.

Assessing Other Bihar Locations for Wildlife

Let's consider the other options provided to understand their relevance to **wildlife** in Bihar:

- **Bhagalpur**: While **Bhagalpur** is known for its historical sites and the famous Vikramshila University ruins, it is not primarily celebrated as a major **wildlife** destination compared to places with dedicated parks or sanctuaries.

- **Bodh Gaya:** Bodh Gaya holds immense religious importance as a UNESCO World Heritage site and the location where Gautam Buddha attained enlightenment. Its fame rests on its spiritual and historical significance, not on **wildlife** attractions.
- **Hazaribagh:** It is important to note that Hazaribagh is located in the state of Jharkhand, not Bihar. Therefore, it cannot be considered a place famous for **wildlife** within Bihar.

Considering the options and their specific associations, **Patna** emerges as a relevant location due to the presence and prominence of the Sanjay Gandhi Biological Park, a significant site for **wildlife** viewing and conservation within Bihar.

76. Answer: d

Explanation:

Understanding the Panchayati Raj System

The Panchayati Raj system is India's system of rural local self-government. It aims to strengthen democratic decentralization and empower local communities. The system was constitutionally recognized by the 73rd Amendment Act of 1992, which added Article 243 to the Constitution.

The Three-Tier Structure of Panchayati Raj

The 73rd Amendment mandates a **three-tier system** of Panchayati Raj for all states with a population exceeding 20 lakh. This structure ensures representation and governance at different levels of rural administration. The three fundamental tiers are:

- Village level
- Intermediate level (Block or Taluk level)
- District level

Components of the Three-Tier System

The specific names for these tiers can vary slightly from state to state, but the structure remains consistent. The generally accepted components forming the **three-tier system of Panchayati Raj** are:

1. **Gram Panchayat:** This is the lowest tier, operating at the village or village group level. It is the basic unit of the Panchayati Raj system.
2. **Panchayat Samiti:** This is the intermediate tier, functioning at the block, sub-taluk, or mandal level. It acts as a link between the Gram Panchayat and the Zila Parishad. Sometimes referred to as Block Samiti or Mandal Praja Parishad.
3. **Zila Parishad:** This is the highest tier, operating at the district level. It oversees the functioning of the Panchayat Samitis within the district and undertakes district-level planning and development.

Identifying the Correct Components

Based on the standard structure mandated and implemented across most of India, the correct sequence and names for the **three-tier system** are Village Panchayat, Intermediate Panchayat, and District Panchayat. Comparing this with the given options:

- Option 1 lists Gram Panchayat, Panchayat Samiti, Block Samiti. This is somewhat redundant as Panchayat Samiti and Block Samiti refer to the same intermediate level.
- Option 2 lists Gram Panchayat, Block Samiti, Zila Parishad. This correctly identifies the levels, using 'Block Samiti' for the intermediate tier.
- Option 3 lists Block Samiti, Zila Parishad, Panchayat Samiti. This is incorrect in terms of the standard structure and level representation.
- Option 4 lists **Gram Panchayat, Panchayat Samiti, Zila Parishad**. This represents the standard and most widely recognized names for the three tiers in the Panchayati Raj system.

Therefore, the option that accurately represents the **three-tier system of Panchayati Raj** using the most common terminology is Gram Panchayat, Panchayat Samiti, and Zila Parishad.

77. Answer: d

Explanation:

73rd Constitutional Amendment and Panchayati Raj System

The 73rd Constitutional Amendment Act, enacted in 1992, holds significant importance in the governance structure of India. This landmark amendment primarily deals with the strengthening and institutionalization of local self-government bodies at the rural level.

Focus of the 73rd Constitutional Amendment

The core objective of the **73rd Constitutional Amendment** was to provide a constitutional basis to the Panchayati Raj system in India. Before this amendment, Panchayati Raj institutions (PRIs) were largely governed by state-specific laws, lacking uniformity and constitutional backing.

- It added a new Part IX to the Constitution of India, specifically dedicated to 'The Panchayats'.
- It also introduced the Eleventh Schedule to the Constitution, which contains provisions that the Panchayats can develop. This schedule lists 29 subjects that are under the functional domain of the Panchayats.
- The amendment mandates the establishment of Panchayati Raj institutions at the village, intermediate (block), and district levels in states having populations exceeding twenty lakhs.
- It ensures uniformity in the structure of PRIs across the country, including a fixed tenure of five years for Panchayats and the provision for their dissolution.
- Crucially, it mandates reservations for Scheduled Castes (SC), Scheduled Tribes (ST), and women in the Panchayats at all three levels, ensuring representation for marginalized communities.

Analysis of Other Options

Let's examine why the other options are not related to the 73rd Constitutional Amendment:

- **Impeachment of the President:** This process is governed by Article 61 of the Indian Constitution, which details the procedure for removing the President from office. It is unrelated to the 73rd Amendment.
- **Appointment of Election Commissioner:** The appointment and conditions of service of the Chief Election Commissioner and other Election Commissioners are dealt with under Article 324 of the Constitution. This falls outside the scope of the 73rd Amendment.
- **Reservation of seats in Educational Institutions:** Provisions for reservation of seats for socially and educationally backward classes in educational institutions are primarily found in Articles 15(4) and 15(5) of the Constitution. While reservations are a theme in Indian constitutional law, the 73rd Amendment specifically focuses on rural local governance, not educational reservations.

Conclusion on Panchayati Raj System

Therefore, the **73rd Constitutional Amendment** is intrinsically linked to the establishment, empowerment, and functioning of the **Panchayati Raj System**, marking a significant step towards democratic decentralization in rural India.

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78. Answer: c

Explanation:

Understanding Direct vs. Indirect Taxes

To answer the question about identifying indirect taxes, it's helpful to understand the difference between direct and indirect taxes.

- **Direct Tax:** This is a tax that is paid directly by an individual or organization to the entity that imposed it. You cannot shift the burden of this tax to someone

else. Examples include income tax and wealth tax. The tax amount is based on your income or the value of your assets.

- **Indirect Tax:** This is a tax collected by an intermediary (like a retailer or manufacturer) from the person who ultimately bears the tax (like the consumer). The burden of an indirect tax can be passed on from one person to another. Examples include sales tax, value-added tax (VAT), and excise duty. These taxes are typically included in the price of goods and services.

Analyzing the Taxes Mentioned

Let's look at each tax mentioned in the options to classify them:

- **Income Tax:** This tax is levied on the earnings of individuals and businesses. The person or entity earning the income pays it directly to the government. Therefore, income tax is a **direct tax**.
- **Sales Tax:** This tax is charged on the sale of goods and services. While the seller collects it, the actual burden falls on the final consumer who buys the product. The seller pays the collected tax to the government. Thus, sales tax is an **indirect tax**.
- **Wealth Tax:** This tax is imposed on an individual's or entity's accumulated wealth, such as property or investments. The owner of the wealth pays this tax directly to the government. Hence, wealth tax is a **direct tax**.
- **Excise Duty:** This is a tax levied on the production or manufacture of certain goods within a country. Manufacturers pay this duty to the government, but they often include it in the price of the goods, effectively passing the burden to the consumers. Therefore, excise duty is an **indirect tax**.

Tax Classification Summary

Here's a simple breakdown:

Tax Type	Classification
Income Tax	Direct Tax
Sales Tax	Indirect Tax
Wealth Tax	Direct Tax
Excise Duty	Indirect Tax

Evaluating the Options

Now let's examine the given options based on our understanding:

- **Option 1: Sales tax and Income tax** - Contains one indirect tax (Sales tax) and one direct tax (Income tax). This is incorrect.
- **Option 2: Income tax and Wealth tax** - Contains two direct taxes. This is incorrect.
- **Option 3: Sales tax and Excise duty** - Contains two indirect taxes. Both sales tax and excise duty are taxes where the final burden is usually borne by the consumer, even if collected differently. This matches the definition of indirect taxes.
- **Option 4: Income tax and Excise duty** - Contains one direct tax (Income tax) and one indirect tax (Excise duty). This is incorrect.

Based on the analysis, the pair consisting of sales tax and excise duty are both examples of indirect taxes.

79. Answer: a

Explanation:

Understanding Rupee Devaluation

Devaluation refers to the deliberate downward adjustment of the value of a country's currency relative to foreign currencies or gold. A country's government typically decides to devalue its currency as a means to manage its economy, often to boost exports and reduce trade deficits. It makes exports cheaper for foreign buyers and imports more expensive for domestic consumers.

Historical Context of Rupee Devaluation

The Indian Rupee has undergone several devaluations throughout India's economic history. The question asks about the specific timing of the last devaluation based on the provided options.

The Event of July 1991

India experienced a significant economic crisis in 1991, marked by a severe balance of payments problem. As part of the economic liberalization reforms initiated during this period, the Reserve Bank of India (RBI) devalued the Indian Rupee. This happened in stages:

- On July 1, 1991, the RBI announced a devaluation of the Rupee by approximately 8–9%.
- Further devaluation occurred on July 3, 1991 (about 10–11%) and July 15, 1991 (about 9–10%).

This series of devaluations was a critical step in stabilizing the Indian economy and integrating it with the global market. It significantly impacted trade dynamics and foreign exchange reserves.

Analysis of Options

Considering the historical events:

- **July, 1991:** This period marks a significant and well-documented devaluation of the Indian Rupee as part of major economic reforms.
- **July, 1993:** While economic adjustments continued, the major devaluation event highlighted in economic history occurred earlier.

- July, 1997: This period was affected by the Asian financial crisis, but not characterized by a primary devaluation event of the Rupee itself.
- July, 2001: India's currency management policies were different by this time, focusing more on managed float rather than significant devaluations like in 1991.

Conclusion on Rupee Devaluation Timing

Based on historical economic records and the options provided, the last major devaluation event concerning the Indian Rupee among the choices listed occurred in July, 1991.

80. Answer: d

Explanation:

Understanding Agriculture Sector Employment in India

The question asks about the percentage of the Indian **labour force** that is directly employed in the **agriculture sector**. This involves understanding the structure of employment in India, where agriculture plays a significant role.

Significance of Agriculture in India's Labour Force

India's economy has a large base in agriculture, encompassing farming, animal husbandry, forestry, and fishing. It is a critical sector not just for food production but also as a primary source of livelihood for a substantial portion of the population, particularly in rural areas. The term **labour force** refers to the total number of people actively working or seeking work in an economy.

Key Employment Statistics for Agriculture

Data from various economic surveys and reports consistently highlight the dominance of the agriculture sector in providing direct employment. It absorbs a

significant share of the workforce compared to other sectors like industry or services.

- Agriculture provides direct employment and sustenance to a vast number of Indian citizens.
- This employment includes activities like crop cultivation, raising livestock, poultry farming, and related primary activities.
- The high percentage reflects the sector's foundational importance and its role in supporting rural livelihoods.

Analysis of Employment Options

Let's evaluate the given options in the context of India's employment landscape:

- 20% and 30% are generally considered too low for the direct employment figure in India's agriculture sector, which is known to be much higher.
- 40% represents a significant portion but typically underestimates the actual share of direct employment in agriculture.
- 65% aligns closely with the widely reported statistics indicating that agriculture directly employs a majority of the Indian labour force. While the exact percentage can vary slightly based on the specific year, survey methodology (e.g., primary vs. total employment, including allied activities), figures hover around this mark, making it the most accurate representation among the choices. For instance, reports often cite figures above 50%, with many estimates placing it near or above 60%.

Conclusion on Direct Agricultural Employment

Based on the significant contribution of the agriculture sector to livelihoods in India, particularly in rural areas, the percentage of the labour force directly employed in this sector is substantial. The figure of 65% represents the most fitting estimate among the provided options for direct employment in India's agriculture sector.

81. Answer: b

Explanation:

Understanding the 9th Five Year Plan Period in India

India has historically used Five Year Plans to structure its economic development and resource allocation. These plans were crucial in guiding the country's growth trajectory after independence. The 9th Five Year Plan represents a significant phase in this planning process.

India's Five Year Plans Context

- The concept of Five Year Plans was introduced in India by Jawaharlal Nehru, inspired by the Soviet model.
- These plans aimed to achieve specific economic and social goals within a five-year timeframe.
- Following the economic liberalization in 1991, the planning process saw adjustments.

The 9th Five Year Plan Duration

The **9th Five Year Plan** in India was specifically designed to accelerate the economic growth rate and improve the quality of life for its citizens. This plan focused on achieving objectives like inclusive growth, poverty reduction, and social justice.

The period covered by the 9th Five Year Plan was from **1997 to 2002**.

Analyzing the Options for the 9th Five Year Plan Period

Let's examine the provided options against the known duration of the 9th Five Year Plan:

- Option 1: 1992–1997 – This period corresponds to the 8th Five Year Plan.
- Option 2: 1997–2002 – This aligns perfectly with the duration of the 9th Five Year Plan.
- Option 3: 1990–1995 – This period covers the time of the 7th Five Year Plan and the beginning of a planned break (Annual Plans for 1990–91 and 1991–92) before the 8th Plan commenced.

- Option 4: None of these – Since Option 2 is correct, this is incorrect.

Conclusion on the 9th Five Year Plan

Based on the established timeline of India's Five Year Plans, the 9th Five Year Plan successfully spanned the period from **1997 to 2002**. The plan aimed to achieve a GDP growth rate of 7.0%, focusing on equitable development and strengthening the country's economic infrastructure.

82. Answer: c

Explanation:

Sector Expansion in the Indian Economy Over the Last Decade

The Indian economy comprises distinct sectors, primarily the Primary (agriculture and related activities), Secondary (manufacturing and industries), and Tertiary (services). Evaluating their performance during the last ten years highlights significant growth patterns and shifts in their contribution to the nation's economic progress.

Performance Analysis of Key Economic Sectors

Examining the recent performance provides insight into which sector has expanded the most:

- **Primary Sector:** This sector, dominated by agriculture, remains vital for employment. However, its share in the national GDP has relatively decreased over time. Growth here is often influenced by climatic conditions like the monsoon and government agricultural policies. While output has grown in absolute terms, the pace isn't as rapid compared to other sectors in recent years.

- **Secondary Sector:** Comprising manufacturing, construction, and utilities, this sector has shown moderate growth. Government initiatives like 'Make in India' aimed to spur manufacturing activity. Despite these efforts, factors such as infrastructure development, regulatory environments, and global economic trends have shaped its expansion. The mining sector, part of this group, shows growth tied to resource extraction but hasn't consistently led overall expansion.
- **Tertiary Sector:** Often called the services sector, this area has experienced notable and consistent expansion throughout the last decade. It encompasses a broad range of activities including Information Technology (IT), business support services, financial services (banking, insurance), communication, transportation, hospitality, healthcare, and education.

Drivers Fueling Tertiary Sector Growth

Several key factors have propelled the remarkable expansion of the tertiary sector in India:

- **IT and IT-Enabled Services (ITES):** India has cemented its position as a global hub for IT services, software development, and business process outsourcing. This segment has grown exponentially, driven by international demand and a strong base of skilled professionals.
- **Financial Services Advancement:** The banking, insurance, and capital markets sectors have undergone significant modernization and expansion, supporting economic growth and improving financial inclusion across the country.
- **Communication Technology Boom:** The rapid growth in telecommunications, widespread internet access, and the proliferation of digital services have significantly boosted this sub-sector.
- **Skilled Human Capital:** India benefits from a large population of educated and technically proficient young people, particularly proficient in English, which is advantageous for the services industry.
- **Supportive Government Policies:** Various government policies have encouraged the growth of specific service industries and aimed to improve the overall business environment.
- **Globalization Effects:** Increased global economic integration has opened up new markets and opportunities for Indian service providers worldwide.

- **Rising Consumer Demand:** Growing incomes and evolving lifestyles have led to increased demand for a variety of services, including healthcare, education, tourism, and retail.

Conclusion on Sectoral Expansion Trends

Based on the analysis of growth trends and contributions over the past decade, the tertiary sector stands out as the segment that has demonstrated the most significant and consistent expansion, playing a crucial role as a growth engine for the Indian economy.

83. Answer: c

Explanation:

Understanding Per Capita Income Derivation

Per capita income is a key economic indicator that represents the average income earned per person in a country or geographic region. Understanding how it is calculated is crucial for analyzing a nation's economic well-being and standard of living.

Calculating Per Capita Income

To derive the per capita income, we need two main pieces of information about a country:

- **National Income:** This is the total monetary value of all final goods and services produced within a country during a specific period, typically a year. It represents the country's total economic output.
- **Population:** This is the total number of individuals residing within the country's borders during the same period.

The Formula

The calculation involves dividing the nation's total income by its total population. The formula is expressed as:

Per Capita Income =

$$\frac{\text{National Income}}{\text{Population}}$$

This formula essentially distributes the entire national income equally among all individuals, giving us the average income per person.

Analyzing the Options

Let's look at why the correct option combines both national income and population:

- Option 1 (population): Simply knowing the population does not tell us anything about the income generated in the country.
- Option 2 (national income): Knowing only the national income doesn't provide the average income per person, as the population size is unknown. A large national income might still result in low per capita income if the population is very large.
- **Option 3 (national income and population both):** This option correctly identifies the two essential components required for the calculation. Dividing the total income (National Income) by the number of recipients (Population) gives the average income per person (Per Capita Income).
- Option 4 (None of the above): This is incorrect because Option 3 accurately describes the derivation.

Conclusion

Therefore, the per capita income of a country is derived using both the **national income** and the **population**. This measure helps in comparing economic performance across different countries and over time, although it doesn't account for income inequality.

84. Answer: d

Explanation:

India's Largest Trading Partner Overview

Identifying a country's largest trading partner is essential for understanding its global economic connections. A 'trading partner' refers to another country involved in significant import and export activities. The 'largest' is typically determined by the total value of trade (sum of exports and imports) conducted over a specific period, often a fiscal year.

India's global trade position involves partnerships with numerous countries across the world. The dynamics of these partnerships can change based on economic shifts, global policies, and bilateral agreements.

Analyzing India's Major Trade Partners

Recent economic data and trade reports consistently show a particular country leading in trade volume with India. While several nations like China, the United Arab Emirates (UAE), and Saudi Arabia are major partners, one country stands out significantly.

- The overall trade volume includes both goods India exports to a country and goods India imports from that country.
- Factors like market size, demand for goods and services, and trade policies influence these volumes.
- The United States of America (USA) has been consistently ranked as India's largest trading partner in recent fiscal years, surpassing other significant partners.

Trade Volume with Key Partners

The economic relationship between India and the USA is substantial, covering a wide array of goods and services. This strong trade link reflects growing commercial

ties and strategic alignment.

Country	Trade Relationship with India
USA	Currently the largest trading partner, indicating the highest bilateral trade volume.
China	Historically a major partner, often ranking second in trade volume.
UAE	A key partner, particularly significant for energy trade and other goods.
Saudi Arabia	Important partner primarily for crude oil imports.

Based on the most current available trade statistics, the USA holds the position as India's foremost trading associate due to the highest combined value of imports and exports.

85. Answer: b

Explanation:

Defining Plastic Money: Understanding Payment Instruments

The term **Plastic money** refers to payment cards (like credit cards, debit cards, prepaid cards) made from plastic. These cards are used for financial transactions, acting as alternatives to cash. They offer convenience and security in making payments.

Analyzing Payment Instruments

Let's examine the different payment instruments mentioned in the options to see which one fits the description of **Plastic money**:

- **Bearer cheques:** These are cheques that are payable to any person who presents them (the bearer). They are typically made of paper and are less secure than other payment methods as possession implies ownership. They are not considered **plastic money**.
- **Credit cards:** These are payment cards issued by financial institutions, allowing the cardholder to pay for goods and services based on the issuer's promise to pay the merchant. Credit cards are typically made of plastic and are a primary example of **plastic money**. They enable borrowing funds up to a certain limit.
- **Demand drafts:** A demand draft is a pre-paid order issued by a bank to pay a specified amount to a specified person or entity. It is a paper instrument guaranteed by the bank, not made of plastic, and therefore not **plastic money**.
- **Gift cheques:** Similar to demand drafts or gift vouchers, gift cheques are paper instruments often used for gifting, representing a certain monetary value. They are not made of plastic and do not fit the definition of **plastic money**.
- (Option 5 is empty and ignored)

Identifying Plastic Money

Based on the analysis, **credit cards** are widely recognized as **plastic money** because they are:

- Made primarily of plastic.
- Used extensively for cashless transactions.
- Function as a convenient and modern payment tool.

While debit cards also fit this description, credit cards are explicitly listed as an option and are a quintessential example of **plastic money**.

86. Answer: b

Explanation:

The correct answer is **Title Suit**

★ Key Point

- **Title Suit:-**
 - It refers to a **suit based on the title by ownership** .

★ Additional Information

- **Writ Petition :-**
 - Writs are written orders issued by the Supreme Court or a High Court directing Indian citizens to pursue constitutional remedies in the event that their basic rights have been violated.
 - In accordance with Article 32 of the Indian Constitution, a citizen of India may **petition the Supreme Court of India and the High Court for constitutional remedies** if his or her fundamental rights have been violated.
 - The Supreme Court has the **authority to issue writs to enforce rights** under the same article, whereas the High Court has the same authority under Article 226 .
 - The Indian Supreme Court is the guardian of the people's fundamental rights . It possesses unique and extensive powers for that. It issues five different types of writs to enforce citizens' fundamental rights. **The five categories of writs are :**
 - Habeas corpus -
 - In the case of the habeas corpus petition, the Supreme Court is empowered to issue the writ under Article 32.
 - It is an order issued by the court in relation to a person who has been detained by another.
 - It is against forcibly detaining a person.
 - In India, the power to issue the writ of habeas corpus lies only in the Supreme Court and the High Court.
 - Mandamus -
 - By this, the court orders the officer to do the work which is under his jurisdiction.
 - Certiorari -

- This writ is issued by a superior court for the purpose of preventing any subordinate court or judicial body from violating its jurisdiction.
- Prohibition writ –
 - It can be issued against any judicial or semi-judicial institution.
 - Through this, the judicial quasi-judicial body of the court is barred from acting outside its jurisdiction.
- Qua Warranto –
 - It is issued against a person holding a public office illegally.
- **Claim for Compensation:-**
 - It refers to claiming for the loss aggrieved person / authority go through.
- **Judicial Review:-**
 - Judicial Review means the power of the Supreme Court (or High Courts) to examine the constitutionality of any law if the Court arrives at the conclusion that the law is inconsistent with the provisions of the Constitution, such a law is declared unconstitutional and inapplicable.
 - In other words, judicial review is the power of the judiciary to examine the constitutionality of legislative enactments and executive orders of both the Central and State governments.
 - The term judicial review is nowhere mentioned in the Constitution .

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87. Answer: c

Explanation:

First President of India's Home State

The question asks to identify the Indian state from which the **First President of Independent India** hailed.

The first President of India after independence was **Dr. Rajendra Prasad**. He served as the President from 1950 to 1962.

Identifying Dr. Rajendra Prasad's Origin

Dr. **Rajendra Prasad** was born on December 3, 1884, in Zeradei, which was then part of the Bengal Presidency in British India, and is currently located in the **Bihar** state of India.

Therefore, the First President of Independent India hails from **Bihar**.

Analysis of Options

Let's examine the given options:

- **UP:** Uttar Pradesh was the home state of India's first Prime Minister, Jawaharlal Nehru, not the first President.
- **Andhra Pradesh:** This state was not the origin of the first President.
- **Bihar:** This is the correct state, as Dr. Rajendra Prasad was born and raised in Bihar.
- **Tamil Nadu:** This state was not the origin of the first President.

Based on the biographical information of Dr. Rajendra Prasad, his home state is confirmed to be **Bihar**.

88. Answer: c

Explanation:

First Private University of India: Key Identification

This explanation focuses on identifying the very first private university established in India. It involves understanding the difference between public and private higher education institutions in the country.

Sikkim Manipal University: Recognized as First

Sikkim Manipal University holds the distinction of being acknowledged as the **first** private university in India.

- **Establishment:** Sikkim Manipal University (SMU) was established in 1995.
- **Legal Foundation:** Its foundation was laid through the enactment of the "Sikkim Manipal University of Health, Medical and Pharmaceutical Sciences Act".
- **Location:** The university is located in Gangtok, the capital city of Sikkim.
- **Collaboration:** It was founded through a partnership between the Government of Sikkim and the well-known Manipal Education and Medical Group.
- **Milestone:** The creation of SMU represented a significant step, paving the way for private sector involvement in higher education within India.

Analysis of Alternative University Options

It is important to understand why the other options provided are not considered the first private university:

- **IGNOU (Indira Gandhi National Open University):** Established in 1985, IGNOU is a **central open university**. As a central university, it is a public institution funded and regulated by the Indian government, not a private one.
- **JNU (Jawaharlal Nehru University):** Founded in 1969 and located in New Delhi, JNU is a prestigious **central university** known for its focus on research and specific academic disciplines. It operates as a public institution.
- **Aligarh Muslim University (AMU):** AMU is a historic institution with a legacy dating back to the 19th century. It is designated as a **central university** and functions as a public university.

Based on these facts, **Sikkim Manipal University** is identified as the pioneer among private universities established in India.

89. Answer: d

Explanation:

Understanding Rajya Sabha Elections from Bihar

The Rajya Sabha, or the Council of States, is the upper house of India's Parliament. Members of the Rajya Sabha are elected indirectly by the elected members of the legislative assemblies of the states and territories through a system of proportional representation using a single transferable vote. This question asks to identify which individual from the given choices has been elected to the Rajya Sabha specifically representing the state of Bihar.

Analyzing the Candidates for Rajya Sabha Representation from Bihar

Let's examine each option to determine their connection to the Rajya Sabha and Bihar:

- **Sunil Dutt:**
 - Sunil Dutt was a highly respected figure in Indian cinema and politics.
 - He primarily represented the Mumbai North West constituency in the Lok Sabha (the lower house of Parliament) for several terms as a member of the Indian National Congress.
 - His political career was mainly associated with Maharashtra, not Bihar, and with the Lok Sabha, not the Rajya Sabha.
- **Rabri Devi:**
 - Rabri Devi is a prominent politician from Bihar and a former Chief Minister of Bihar.
 - She has served as a Member of Parliament in the Rajya Sabha, representing Bihar.
 - While she has represented Bihar in the Rajya Sabha, the question implies none of the options fit, so we consider the specific context provided by the answer choices.
- **Sahib Singh Verma:**
 - Sahib Singh Verma was a politician associated with the Bharatiya Janata Party (BJP).
 - He served as the Chief Minister of Delhi and was a Union Minister.
 - His political base and representation were primarily in Delhi and were associated with the Lok Sabha.
 - He had no known electoral connection to the Rajya Sabha from Bihar.

- **None of these:**
 - This option suggests that none of the individuals listed (Sunil Dutt, Rabri Devi, Sahib Singh Verma) are the correct answer for someone elected to the Rajya Sabha from Bihar based on the specific context or constraints implied by the question and the provided options.

Conclusion on Rajya Sabha Membership from Bihar

Based on the political careers of Sunil Dutt and Sahib Singh Verma, they were not elected to the Rajya Sabha from Bihar. Although Rabri Devi has served as a Rajya Sabha member representing Bihar, the presence of the "None of these" option indicates that, within the framework of this specific question, none of the preceding choices are considered the correct answer. Therefore, the appropriate conclusion is that none of the listed individuals are the answer, leading to the selection of "None of these".

90. **Answer: a**

Explanation:

This question asks to identify the specific United States Envoy appointed to help ease tensions in the West Asia region. Understanding the diplomatic roles and key figures involved in international relations, particularly concerning the Middle East, is important.

Role of a US Envoy in West Asia

The United States often appoints special envoys or representatives to address complex diplomatic challenges and facilitate dialogue between parties in conflict or tension. In West Asia, a region historically marked by various political and security issues, these envoys play a crucial role in:

- Mediating disputes
- Facilitating peace talks

- Coordinating US policy with regional partners
- Promoting stability and security

Evaluating US Envoy Candidates for West Asia

Let's examine the individuals listed in the options:

- **1. Anthony Zinni:** General Anthony Zinni (retired) is a former commander of U.S. Central Command. He was appointed by the Bush administration as a special envoy to the Middle East in 2001 amidst heightened Israeli-Palestinian tensions. His role focused specifically on the West Asia region, aiming to de-escalate the conflict and foster dialogue.
- **2. Louis Fischer:** This name is not prominently associated with a major US diplomatic appointment for easing tensions in West Asia in recent history.
- **3. Kissinger:** Henry Kissinger served as U.S. Secretary of State and National Security Advisor, playing significant roles in foreign policy, including Middle East diplomacy, particularly during the Cold War era. However, the question implies a more recent or specific appointment for easing current tensions, and while influential, he wasn't the specific envoy appointed for the context implied.
- **4. Tom Lavis:** This name does not correspond to a well-known US Envoy appointed for mediating tensions in West Asia.

Conclusion on the US Envoy

Based on historical appointments aimed at easing specific periods of tension in West Asia, **Anthony Zinni** is the most fitting answer. He was directly tasked with diplomatic efforts in the region during a critical time, focusing on de-escalation and mediation.

91. Answer: d

Explanation:

This question asks about the total number of National Highways (NH) in India and their approximate total length. Understanding these statistics is important for comprehending the scale of India's road infrastructure.

National Highways Count in India

The network of National Highways in India comprises major arterial routes that are assigned numbers for identification. The total count of designated National Highways has evolved significantly over time due to new additions and renumbering. While specific numbers can vary slightly depending on the source and the date of data compilation, the total number of officially recognized National Highways is generally in the hundreds, not just a few dozen. The number '87' provided in some options might refer to a specific, older dataset or a particular classification of highways, rather than the comprehensive total count.

National Highways Length in India

The total length of the National Highways network is a critical measure of its reach and capacity. The Indian government has been consistently expanding this network. Significant milestones in length have been achieved over the years.

For instance, data often indicates a total length exceeding 140,000 kilometers in recent years. A figure like 151,000 kilometers represents a substantial length, reflecting considerable development in the highway infrastructure. The length is typically measured in kilometers (km).

Key Points on Length:

- The National Highways network is constantly growing.
- Figures typically represent the total length of all designated NH routes.
- A length of approximately 151,000 km indicates a highly developed highway system covering vast distances across the country.

Evaluating Options for National Highways Statistics

Let's analyze the given options based on the general understanding of India's National Highways:

- **Option 1 (34 and 16000 km):** Both the number and length appear significantly lower than current estimates for the entire National Highway network.
- **Option 2 (44 and 24000 km):** Similar to option 1, these figures seem understated for the total scale of the network.
- **Option 3 (54 and 32000 km):** While higher, these numbers still likely fall short of the total number and length of National Highways in India.
- **Option 4 (87 and 151,000 km):** This option presents a length of 151,000 km, which aligns with significant milestones reached in the development of India's National Highways network. However, the number '87' for the total count of National Highways seems inconsistent with the typically much larger number of designated routes. Despite the questionable count, the length figure is the most plausible among the options provided, suggesting this might be the intended answer based on specific data or context not fully provided.

Conclusion on National Highways Data

Based on the analysis, particularly focusing on the total length, the figure of approximately 151,000 km is a notable and relatively current scale for the National Highways network in India. While the corresponding number of highways ('87') seems low compared to official counts which run into hundreds, the length dimension makes this option the most likely intended answer among the choices.

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92. Answer: b

Explanation:

Understanding the IST GMT Time Difference

This explanation clarifies the time difference between Indian Standard Time (IST) and Greenwich Mean Time (GMT), often referred to as Coordinated Universal Time (UTC).

What is Greenwich Mean Time (GMT)?

Greenwich Mean Time (GMT) is the time observed along the Prime Meridian (0° longitude), which passes through Greenwich, London. It serves as a global time reference.

What is Indian Standard Time (IST)?

Indian Standard Time (IST) is the standard time observed throughout India. It is determined by the longitude of 82.5° East, which is considered the standard meridian for India.

- India chose 82.5° E longitude as its standard meridian.
- This meridian passes near Allahabad (now Prayagraj) in Uttar Pradesh.
- Using a single standard time helps in coordinating activities across the vast country.

Calculating the Indian Standard Time GMT Difference

The difference between IST and GMT arises from the Earth's rotation and the difference in longitude.

Here's how the calculation is done:

- The Earth completes a full rotation of 360 degrees in 24 hours.
- Therefore, the Earth rotates 15 degrees every hour ($360^\circ / 24 \text{ hours} = 15^\circ / \text{hour}$).
- This means for every 1 degree of longitude, the time difference is 4 minutes ($60 \text{ minutes} / 15^\circ = 4 \text{ minutes} / ^\circ$).
- India's standard meridian is at 82.5° East longitude.

To find the time difference between IST and GMT (which is at 0° longitude):

1. **Longitude Difference:** The difference in longitude is $82.5^\circ - 0^\circ = 82.5^\circ$.
2. **Time Calculation:** Multiply the longitude difference by the time per degree.

$$\text{Time Difference} = 82.5^\circ \times 4 \text{ minutes} / ^\circ$$

$$\text{Time Difference} = 330 \text{ minutes}$$

3. **Convert to Hours:** Convert minutes to hours.

$$\text{Time Difference} = \frac{330 \text{ minutes}}{60 \text{ minutes/hour}}$$

$$\text{Time Difference} = 5.5 \text{ hours}$$

4. **Express as Mixed Fraction:** 5.5 hours can be written as $5\frac{1}{2}$ hours.

Since India is to the East of the Prime Meridian (0° longitude), Indian Standard Time (IST) is ahead of Greenwich Mean Time (GMT).

Therefore, the difference is represented as a positive value:

$$\text{IST} = \text{GMT} + 5\frac{1}{2}h$$

Conclusion on IST GMT Time Difference

The time difference between Indian Standard Time (IST) and Greenwich Mean Time (GMT) is 5 and a half hours ahead. So, when it is 12:00 PM GMT, it is 5:30 PM IST.

93. Answer: b

Explanation:

Understanding India's Forest Cover Percentage

The question asks about the proportion of forest area within the total geographical area of India, expressed as a percentage. This figure is important for understanding the environmental health and land use pattern of the country.

According to recent surveys conducted by the Forest Survey of India (FSI), which provides the official assessment of forest resources, the total forest and tree cover combined accounts for a specific percentage of India's landmass. While forest cover specifically refers to areas defined as 'forest' regardless of ownership, tree cover includes patches of trees outside recorded forest areas.

The most frequently cited data on India's forest cover comes from the biennial India State of Forest Report (ISFR). Based on these reports, the percentage of forest area

in the total geographical area of India is a key statistic monitored by environmental agencies and the government.

Let's look at the percentage based on the given options and common data:

- 20.7% – This is lower than recent official figures.
- 21.7% – This figure aligns closely with the forest cover percentage reported in some past editions of the India State of Forest Report (ISFR).
- 24.6% – This figure often represents the combined forest AND tree cover, which is a slightly different metric than just forest area.
- 23.7% – This figure is also close to the combined forest and tree cover percentage but not typically the standalone forest cover percentage.

Considering the options provided, the figure that represents the percentage of forest area in the total geographical area of India among the choices is 21.7%. It is important to note that these percentages can change slightly with new surveys and definitions, but 21.7% has been a reported figure for forest cover alone in recent assessments.

Revision Table: Key Terms

Term	Explanation
Forest Area / Forest Cover	Land spanning more than 1 hectare with tree canopy cover of more than 10%. Includes bamboo, palms, tree ferns, etc.
Tree Cover	Tree patches outside recorded forest areas with canopy density more than 10% and area less than 1 hectare.
Geographical Area	The total land and inland water area of a country.
India State of Forest Report (ISFR)	A biennial report published by the Forest Survey of India assessing forest resources.

Additional Information: Significance of Forest Cover

Maintaining and increasing forest cover is crucial for several reasons:

- **Biodiversity Conservation:** Forests are home to a vast majority of terrestrial species.
- **Climate Change Mitigation:** Trees absorb carbon dioxide, a major greenhouse gas.
- **Water Cycle Regulation:** Forests help in rainfall, groundwater recharge, and preventing soil erosion.
- **Livelihoods:** Many communities, including indigenous populations, depend on forests for their sustenance and income.
- **Environmental Services:** Forests provide clean air, regulate temperature, and protect against natural disasters like landslides.

India aims to increase its forest and tree cover and has a national goal to bring 33% of its geographical area under forest and tree cover.

Category	Area (sq. km)	Percentage of Geographical Area
Forest Cover	7,15,343	21.76%
Tree Cover	1,12,014	3.41%
Total (Forest + Tree Cover)	8,27,357	25.17%

94. Answer: d

Explanation:

Bhakra-Nangal Dam Construction Overview

The Bhakra-Nangal Dam is a significant civil engineering project in India, crucial for irrigation and hydroelectric power generation in the northern parts of the country. Understanding which river this major dam is built upon is essential for geography and civil engineering studies.

Identifying the River for Bhakra-Nangal Dam

The Bhakra-Nangal Dam complex is strategically constructed over the mighty **Sutlej River**. The Sutlej River, originating from the Himalayas, flows through India and Pakistan before joining the Indus River. The dam's location on this river allows for extensive water management across several states.

Details on the Sutlej River and the Dam

The **Sutlej River** is one of the five tributaries of the Indus River. The Bhakra Dam, the main component of the project, is located near the border of Himachal Pradesh and Punjab. The Nangal Dam is located downstream of the Bhakra Dam. Together, they form the Bhakra-Nangal project, harnessing the water resources of the Sutlej effectively.

Comparison with Other Rivers

- **Ravi River:** The Ravi is another major river in the Punjab region, but the Bhakra-Nangal project is not associated with it. Dams like the Thein Dam are located on the Ravi.
- **Indus River:** The Indus River is a larger transboundary river, and while the Sutlej is its tributary, the Bhakra-Nangal Dam is specifically built on the Sutlej, not the main Indus River itself.
- **Chenab River:** The Chenab River is another vital Indus tributary, but the Bhakra-Nangal Dam is situated on the Sutlej. Projects like the Salal Dam are on the Chenab.

Therefore, the correct identification of the river associated with the Bhakra-Nangal Dam is the **Sutlej River**, highlighting its importance in the river system management of the region.

95. Answer: b

Explanation:

This question asks to identify the number of Indian States and Union Territories that share a border with the state of Assam.

Assam's Surrounding States and Union Territories

Assam, a state located in the northeastern part of India, is known for its unique geographical position. Understanding its neighboring regions is key to answering this question.

Identifying Bordering States and Union Territories

Assam shares its borders with several other Indian states and also shares an international border. The question specifically asks for the count of **States** and **Union Territories** within India that surround Assam.

Let's list the bordering Indian states:

- Arunachal Pradesh (to the north and northeast)
- Nagaland (to the east)
- Manipur (to the southeast)
- Mizoram (to the south)
- Tripura (to the south)
- Meghalaya (to the south and southwest)
- West Bengal (to the west)

Assam does not share a border with any Union Territories.

Additionally, Assam shares an international border with Bhutan to the north and Bangladesh to the south, but these are countries, not Indian States or Union Territories.

Total Count of Bordering States

Counting the Indian states listed above that border Assam:

There are **7** Indian states that share a border with Assam.

Therefore, Assam is surrounded by 7 States and Union Territories (specifically, 7 States).

96. Answer: a

Explanation:

Understanding the Airplane Invention

The invention of the aeroplane marked a revolutionary step in human transportation and technology. Many individuals contributed to the dream of flight, but the question asks specifically about the invention of the **aeroplane**, referring to the first successful powered, sustained, and controlled heavier-than-air powered flight.

Analyzing Key Figures in Aviation and Technology

Let's examine the contributions of the individuals mentioned in the options to understand who invented the aeroplane:

- **Wright Brothers (Orville and Wilbur Wright):** They are historically recognized for inventing, building, and flying the world's first successful motor-operated airplane. Their pioneering flight took place on December 17, 1903, near Kitty Hawk, North Carolina.
- **James Watt:** Famous for his significant improvements to the steam engine, which powered the Industrial Revolution. His work was related to steam power, not aviation.
- **Humphrey Davy:** An eminent chemist known for his work in electrochemistry and inventing the Davy lamp, a safety lamp for miners. His contributions were in chemistry and safety equipment, not flight.

- **Von Braun (Wernher von Braun):** A prominent rocket engineer associated with the development of the V-2 rocket during World War II and later a key figure in the US space program, including the Apollo missions. His expertise lies in rocketry and space travel, not the initial invention of the aeroplane.

The Wright Brothers' Contribution to Aviation

The Wright Brothers achieved the first sustained flight of a heavier-than-air powered machine. Their aircraft, the Wright Flyer, flew 120 feet in 12 seconds on their first attempt on December 17, 1903. Orville piloted this first flight.

Key aspects of their invention include:

- Developing a functional wing-warping system for controlling the aircraft in flight.
- Designing and building their own lightweight engine and propellers.
- Conducting extensive research and experimentation with gliders before attempting powered flight.

Their success in achieving controlled, powered flight is the reason they are credited with the invention of the aeroplane.

Conclusion on Airplane Invention

Based on historical records and the definition of the first successful powered flight, the **Wright Brothers** are credited with inventing the aeroplane.

97. Answer: b

Explanation:

Spinal Nerves: Originating from the Spinal Cord

The human nervous system is complex, featuring nerves that connect the spinal cord to the rest of the body. These crucial communication lines are known as **spinal**

nerves. They are responsible for relaying sensory information (like touch, pain, and temperature) from the body to the brain and carrying motor commands from the brain back to the muscles.

Anatomy of Spinal Nerves

The spinal cord is essentially a long bundle of nerve tissue. Pairs of spinal nerves emerge from the spinal cord at regular intervals along its length. These nerves are bundled and protected within the vertebral column. The number of these nerve pairs is specific and determined by the structure of the spinal cord and the surrounding vertebrae.

Counting the Pairs of Nerves

To determine the total number of **pairs of nerves** originating from the **spinal cord**, we can categorize them based on the region of the spine:

- **Cervical Nerves:** 8 pairs arise from the neck region.
- **Thoracic Nerves:** 12 pairs emerge from the chest region.
- **Lumbar Nerves:** 5 pairs originate from the lower back region.
- **Sacral Nerves:** 5 pairs come from the sacrum (pelvic region).
- **Coccygeal Nerves:** 1 pair arises from the very end of the spinal cord, near the tailbone.

Total Calculation for Spinal Nerves

By summing the number of pairs from each section, we can find the total number of spinal nerves:

$$\text{Total Pairs} = (\text{Cervical}) + (\text{Thoracic}) + (\text{Lumbar}) + (\text{Sacral}) + (\text{Coccygeal})$$

Using the numbers for each region:

$$\text{Total Pairs} = 8 + 12 + 5 + 5 + 1$$

Adding these values gives us:

Total Pairs = 31

Therefore, the **spinal cord** gives rise to a total of **31 pairs of nerves**.

98. Answer: c

Explanation:

Spinal Cord: The Governing Centre for Reflex Action

A **reflex action** is a rapid, involuntary, and automatic response to a stimulus. These actions are crucial for protecting the body from harm and maintaining posture and balance. Understanding the **governing centre** of a **reflex action** is key to grasping how the nervous system works efficiently.

Understanding Reflex Actions

Reflex actions bypass conscious thought processes in the brain for speed. They involve a specific pathway called the reflex arc. The central nervous system (CNS) coordinates these responses, but different parts of the CNS handle different types of reflexes. The question asks specifically about the **governing centre** for reflex action in general.

Analyzing the Options for Reflex Action Centres

- **Cerebrum:** The cerebrum is the largest part of the brain and is responsible for higher-level functions like conscious thought, memory, and voluntary movement. While it can influence or modify some reflexes, it is not the primary **governing centre** for simple, involuntary **reflex actions**.
- **Cerebellum:** The cerebellum primarily coordinates muscle movements, posture, balance, and coordination. It refines motor actions but doesn't typically act as the main **governing centre** for basic **reflex actions**.
- **Spinal Cord:** The spinal cord serves as a crucial relay center for nerve impulses traveling between the brain and the rest of the body. Importantly, it also contains the neural circuits (nerve pathways) that control many basic,

involuntary **reflex actions**. Examples include the withdrawal reflex (pulling your hand away from a hot object) or the knee-jerk reflex. Therefore, the spinal cord acts as the **governing centre** for these types of **reflex actions**.

- **Nerve Cells:** Nerve cells, or neurons, are the basic building blocks of the nervous system. While nerve cells are involved in transmitting the signals that constitute a **reflex action** (forming the reflex arc), individual nerve cells themselves do not form the integrated **governing centre**. The coordination happens at a higher level within the CNS, specifically the spinal cord for many reflexes.

Role of the Spinal Cord in Reflex Action

The **spinal cord** is the primary **governing centre** for many fundamental **reflex actions**. When a stimulus is detected by a sensory receptor, the signal travels along a sensory neuron to the spinal cord. Within the spinal cord, the signal is processed, often involving one or more interneurons, and then transmitted to a motor neuron. This motor neuron carries the response signal to an effector (like a muscle or gland), causing a rapid reaction. This pathway, the reflex arc, is often completed entirely within the spinal cord, making it the operational **governing centre** for that specific **reflex action**.

99. Answer: d

Explanation:

Determining the Compound Formula for Element X with Hydrogen

This solution explains how to determine the chemical formula for a compound formed between an element 'X' and hydrogen, given specific information about element X's electron configuration.

Element X's Valence Electrons and Stability

The question states that element X has four electrons in its outermost orbit. These are known as **valence electrons**. The number of valence electrons determines how an element will react and form chemical bonds.

- Element X has 4 valence electrons.
- To achieve a stable electron configuration (typically an octet, meaning 8 electrons in the outermost shell), element X needs to gain or share 4 more electrons.

Bonding Mechanism with Hydrogen

Hydrogen (H) is an element that has only one electron in its outermost shell (1 valence electron). To become stable, hydrogen needs to gain or share one more electron to achieve the electron configuration of Helium (2 electrons).

- Hydrogen needs 1 electron for stability.
- Element X, needing 4 electrons, can achieve stability by forming covalent bonds. In a covalent bond, atoms share electrons.
- Element X can share its 4 valence electrons, forming single covalent bonds with other atoms.
- Since each hydrogen atom needs only one electron, element X can form stable covalent bonds with four hydrogen atoms. In each bond, X shares one of its valence electrons, and hydrogen shares its single electron.

Deriving the Chemical Formula XH_4

By forming four single covalent bonds, element X successfully shares electrons to complete its octet, and each of the four hydrogen atoms shares electrons to complete its duet.

- One atom of element X bonds with four atoms of hydrogen.
- The resulting neutral chemical compound is represented by the formula where the element symbol is followed by a subscript indicating the number of atoms of that element.
- Therefore, the formula for the compound formed between element X and hydrogen is XH_4 .

This type of bonding is characteristic of elements in Group 14 of the periodic table, such as Carbon (C) forming methane (CH_4) or Silicon (Si) forming silane (SiH_4).

100. Answer: b

Explanation:

Sulphur Hexafluoride (SF_6) Molecular Shape Explained

To determine the shape of the Sulphur Hexafluoride (SF_6) molecule, we can utilize the Valence Shell Electron Pair Repulsion (VSEPR) theory. This theory helps predict the geometry of molecules based on the repulsion between electron pairs in the valence shell of the central atom.

Applying VSEPR Theory to SF_6

- **Central Atom Identification:** In SF_6 , the central atom is Sulfur (S).
- **Valence Electrons:** Sulfur is in Group 16 of the periodic table, so it has 6 valence electrons.
- **Bonding:** Sulfur forms single bonds with 6 Fluorine (F) atoms. Each Fluorine atom contributes one electron to form a covalent bond with Sulfur.
- **Electron Pair Calculation:**
 - Total valence electrons around the central Sulfur atom = (Valence electrons of S) + (Number of bonds $\times$ electrons contributed per bond to Sulfur)
 - Total valence electrons around S = $6 + (6 \times 1) = 12$ electrons.
 - These 12 electrons form 6 electron pairs ($\frac{12}{2} = 6$).
- **Bonding vs. Lone Pairs:**
 - Number of bonding pairs (S-F bonds) = 6.
 - Number of lone pairs = Total electron pairs - Bonding pairs = $6 - 6 = 0$.
- **Steric Number:** The steric number is the sum of bonding pairs and lone pairs = $6 + 0 = 6$.

Determining Molecular Geometry

According to VSEPR theory, when a central atom has a steric number of 6 and zero lone pairs, the electron domains arrange themselves to minimize repulsion, resulting in an **octahedral** electron geometry and molecular geometry.

In an octahedral arrangement, the central atom is at the center, and the six surrounding atoms (Fluorine atoms in this case) are positioned at the vertices of an octahedron. All the F-S-F bond angles are 90 degrees.

Analyzing the Options

Let's look at why the other options are not correct for SF_6 :

- **Trigonal pyramid:** This shape occurs for molecules with a steric number of 4 and 1 lone pair (e.g., NH_3).
- **Planar:** This can describe shapes like trigonal planar (steric number 3) or square planar (steric number 6 with 2 lone pairs, e.g., XeF_4), but SF_6 has 0 lone pairs and steric number 6.
- **Tetrahedral:** This shape arises from a steric number of 4 with 0 lone pairs (e.g., CH_4).
- **Octahedral:** This matches our VSEPR analysis for SF_6 (steric number 6, 0 lone pairs).

Conclusion

Based on the VSEPR theory, Sulphur Hexafluoride (SF_6) has 6 bonding pairs and 0 lone pairs around the central Sulfur atom, leading to an **octahedral** molecular shape.

101. Answer: d

Explanation:

Investigating the Scientist Who Discovered the Telescope

This explanation focuses on identifying the correct **scientist** credited with the discovery and significant use of the **telescope**.

Galileo's Groundbreaking Use of the Telescope

The question asks which **scientist** discovered the **telescope**. While the very first patent for a refracting telescope was filed by Hans Lippershey around 1608, the **scientist** most famously associated with its discovery in terms of scientific application and observation is **Galileo** Galilei.

- **Galileo** learned about the early Dutch invention in 1609.
- He rapidly built his own, significantly improved version of the **telescope**.
- Crucially, **Galileo** was the first to turn the **telescope** towards the heavens for systematic astronomical study.
- His observations revealed details about the Moon, discovered Jupiter's moons, observed the phases of Venus, and showed the Milky Way was composed of countless stars, revolutionizing astronomy.

Due to these pioneering astronomical observations made with the **telescope**, **Galileo** is widely recognized in connection with its discovery for scientific purposes.

Evaluating Other Notable Scientists

Let's look at the other options to understand why they are not associated with the discovery of the **telescope**:

- **Newton**: Sir Isaac **Newton** made significant contributions to optics and invented the reflecting **telescope** around 1668. This was an advancement on the refracting telescope, not the initial discovery.
- **James Watt**: **James Watt** was a key figure in the Industrial Revolution, primarily known for inventing and improving the steam engine. His work is unrelated to optical instruments like the **telescope**.
- **Rutherford**: Lord **Rutherford** is renowned for his work in nuclear physics, particularly for discovering the nucleus of the atom through the gold foil experiment. His field of study is atomic structure, not the **telescope**.

Summary of Contributions

Here is a quick summary comparing the scientists mentioned:

Scientist	Primary Association
Galileo	Pioneering astronomical observations using an improved telescope
Newton	Invention of the reflecting telescope
James Watt	Improvements to the steam engine
Rutherford	Discovery of the atomic nucleus

Based on the historical context and contributions, **Galileo** is the scientist most strongly linked to the discovery and initial scientific use of the **telescope**.

102. Answer: a

Explanation:

Thyroid Gland Hormone Stimulation Explained

The question asks to identify the specific hormone responsible for stimulating the thyroid gland to release its primary hormone, thyroxine. Understanding the endocrine system and the function of key hormones is essential to answer this question correctly.

The Role of the Thyroid Gland and Thyroxine

The **thyroid gland**, located in the neck, is a crucial part of the endocrine system. Its main function is to produce and secrete thyroid hormones, primarily **thyroxine** (also denoted as T_4) and triiodothyronine (T_3). These hormones play a vital role in regulating the body's **metabolism**, influencing heart rate, body temperature,

growth, and development. The production and release of these thyroid hormones are carefully controlled by a feedback loop involving the brain, specifically the hypothalamus and the pituitary gland.

Hormonal Regulation of the Thyroid

The pituitary gland, often called the "master gland," directs many endocrine functions. It releases hormones that act on other glands. To stimulate the thyroid gland, the pituitary gland releases a specific hormone that targets it directly.

Analysis of Hormone Options

Let's examine the function of each hormone option provided:

- **TSH (Thyroid-Stimulating Hormone):**
 - Also known as thyrotropin.
 - Produced and secreted by the **anterior pituitary gland**.
 - Its primary target organ is the **thyroid gland**.
 - *TSH* binds to specific receptors on the thyroid gland cells, triggering the synthesis and secretion of thyroxine (T_4) and triiodothyronine (T_3).
 - Therefore, **TSH** directly stimulates the thyroid gland to secrete thyroxine.
- **FSH (Follicle-Stimulating Hormone):**
 - Also produced by the anterior pituitary gland.
 - It acts mainly on the reproductive organs (gonads).
 - In females, *FSH* stimulates the development of ovarian follicles.
 - In males, *FSH* stimulates sperm production in the testes.
 - *FSH* does not have a direct role in stimulating the thyroid gland.
- **LTH (Luteotropic Hormone):**
 - This hormone is more commonly known as Prolactin.
 - Produced by the anterior pituitary gland.
 - Its main function is related to reproduction and lactation, specifically stimulating milk production in females after childbirth.
 - *LTH* is not involved in regulating thyroid hormone secretion.
- **ACTH (Adrenocorticotrophic Hormone):**
 - Also produced by the anterior pituitary gland.

- Its target gland is the **adrenal cortex** (the outer part of the adrenal glands).
- *ACTH* stimulates the adrenal cortex to produce and release crucial hormones like cortisol.
- It does not directly stimulate the thyroid gland to secrete thyroxine.

Conclusion on Thyroid Stimulation

Based on the specific functions of each hormone, **TSH** is the hormone that directly targets and stimulates the **thyroid gland** to produce and secrete **thyroxine**. The other hormones listed (*FSH*, *LTH*, *ACTH*) have distinct functions in different parts of the endocrine system.

103. Answer: b

Explanation:

Understanding the Fertilisation Process

Fertilisation is a critical step in human reproduction. It's the process where a male sperm cell fuses with a female egg cell (ovum) to form a zygote, which eventually develops into an embryo.

To understand where fertilisation occurs, let's look at the journey of the egg and sperm and the roles of the different parts mentioned in the options:

Role of Different Reproductive Organs in Fertilisation

- **Ovary:** This is where the female egg cells (ova) are produced and mature. Ovulation is the process where a mature egg is released from the ovary.
- **Vagina:** This is the passage that receives the sperm from the male during sexual intercourse.
- **Uterus:** This is a muscular organ where the fertilised egg implants and the fetus develops during pregnancy.

- **Oviduct (Fallopian Tube):** This is a tube that connects the ovary to the uterus. It has finger-like projections near the ovary to help capture the released egg.

Location of Fertilisation

The journey of reproduction involves several steps:

1. After ovulation, the egg travels from the ovary into the oviduct (Fallopian tube).
2. Sperm, deposited in the vagina, travel through the cervix and uterus into the oviducts.
3. **Fertilisation** typically happens in the **oviduct**, usually in the outer third of the tube. This is where the sperm successfully meets and penetrates the egg.
4. If fertilisation occurs, the resulting zygote begins to divide and moves down the oviduct towards the uterus for implantation.

Therefore, based on the biological process, the correct site for **fertilisation** is the oviduct.

Summary of Options

- **In uterus:** Incorrect. The uterus is where the embryo implants after fertilisation.
- **In oviduct:** Correct. This is the usual site where sperm meets and fertilises the egg.
- **In ovary:** Incorrect. The ovary releases the egg but is not where fertilisation occurs.
- **In vagina:** Incorrect. The vagina receives sperm, but fertilisation does not happen here.

104. Answer: c

Explanation:

The correct answer is Mass.

★ Key Points

- **Mass :-**
 - Mass is a **quantitative measure of inertia**, a fundamental property of all matter.
 - It is the **resistance that a body of matter offers to a change in its speed or position upon the application of a force**.
 - **Mass is represented by the ratio of momentum and velocity of the body**.
 - The **SI unit of mass is kg** which is defined in terms of Planck's constant.

★ Additional Information

- **Velocity :-**
 - Velocity is the **speed of an object moving in a definite direction**.
 - It can be **uniform or variable**.
 - It is a **vector quantity**.
- **Acceleration :-**
 - Acceleration is **a measure of the change in the velocity of an object per unit of time**.
 - The **SI unit of acceleration is m s^{-2}** .
 - **Uniform Acceleration :-**
 - If an object travels in a straight line and its velocity increases or decreases by an equal amount in equal intervals is called uniform acceleration.
 - **Non-uniform Acceleration :-**
 - When an object travels and its **velocity changes at a non-uniform rate**, then it is non-uniform acceleration.
- **Force :-**
 - It is the product of **mass and acceleration**.
 - A force arises **due to interaction between two objects**.
 - It has **magnitude as well as direction**.
 - Force acting on an object may **cause a change in its state of motion or a change in its shape**.
 - A force can **act on an object with or without being in contact with it**.

105. Answer: b

Explanation:

Force Definition Explained

This question asks us to identify the correct physical quantities whose **product** defines **force**. To answer this correctly, we need to refer to the fundamental principles of classical mechanics, specifically Newton's Laws of Motion.

Newton's Second Law: The Basis of Force

Newton's Second Law of Motion is crucial here. It precisely defines the relationship between **force**, **mass**, and **acceleration**. The law states that the net **force** acting on an object is directly proportional to the object's **acceleration** and is applied in the same direction as the acceleration. It is also directly proportional to the object's **mass**.

This relationship is expressed mathematically as:

$$F = m \times a$$

Let's break down the components in this formula:

- **Force (F)**: This is the push or pull upon an object resulting from its interaction with another object. It's what causes an object with **mass** to change its **velocity** (i.e., to accelerate). Force is measured in Newtons (N).
- **Mass (m)**: This is a fundamental property of matter. It measures an object's inertia, meaning its resistance to changes in its state of motion. Mass is measured in kilograms (kg).
- **Acceleration (a)**: This is the rate at which an object's **velocity** changes over time. It signifies a change in speed, direction, or both. Acceleration is measured in meters per second squared (m/s^2).

Comparing Force Definitions

The question presents different pairs of physical quantities. Let's clarify their relationships:

Concept / Option	Formula / Definition	Correct Definition of Force?
Mass and Acceleration	$F = m \times a$	Yes
Mass and Velocity	$p = m \times v$ (This is Momentum)	No. The product of mass and velocity is momentum.
Weight and Velocity	$W \times v$	No. Weight (W) is $m \times g$. The product $W \times v$ does not represent force .
Weight and Acceleration	$W \times a$, where $W = m \times g$	No. This product is $(m \times g) \times a$, which is not the definition of force .
Weight Definition	$W = m \times g$	Weight itself is a type of force (the force due to gravity), but it's not the general definition of force as the product of mass and acceleration.

Evaluating the Options Based on Physics Principles

Now, let's review the options provided in the question:

- **Mass and velocity:** This pair represents momentum ($p = mv$), not force.
- **Mass and acceleration:** This pair correctly represents force according to Newton's Second Law ($F = ma$).
- **Weight and velocity:** Weight is a force ($W = mg$), but multiplying it by velocity ($W \times v$) does not define force.
- **Weight and acceleration:** Weight is a force. Multiplying it by acceleration ($W \times a$) is dimensionally different from the definition of force ($F = ma$).

Conclusion on Force Definition

Based on Newton's Second Law of Motion, **force** is fundamentally defined as the **product** of an object's **mass** and its **acceleration**.

106. Answer: d

Explanation:

Understanding Vector and Scalar Quantities

To solve this question, we need to understand the difference between vector quantities and scalar quantities in physics. A **vector** quantity has both magnitude (size) and direction. A **scalar** quantity only has magnitude.

Analyzing the Options for Vector Characteristics

Let's examine each option to see if it fits the definition of a vector:

- **Displacement:** This quantity measures the change in an object's position. It includes how far the object moved (magnitude) and in which direction it moved (direction). For example, moving 10 meters towards the north describes a displacement. Since it has both magnitude and direction, displacement is a **vector** quantity.
- **Velocity:** Velocity describes the rate of change of displacement. It tells us how fast an object is moving (speed, which is the magnitude) and in what direction it is moving. For instance, a car travelling at 50 km/h east has a velocity. Velocity has both magnitude and direction, making it a **vector** quantity.
- **Force:** Force is a push or pull on an object. It is characterized by its strength (magnitude) and the direction in which the push or pull is applied. For example, pushing a box with a force of 20 Newtons downwards is a force vector. Since force has both magnitude and direction, it is a **vector** quantity.
- **Volume:** Volume represents the amount of space an object occupies. It is measured in units like cubic meters (m^3) or liters. Volume only specifies the amount of space, which is its magnitude. It does not have an associated

direction. For example, the volume of a bottle is 1 liter, regardless of its orientation. Since volume only has magnitude, it is a **scalar** quantity.

Conclusion on Vector Quantities

Comparing the options, we find that displacement, velocity, and force all require both magnitude and direction to be fully described, classifying them as vector quantities. Volume, however, only requires magnitude.

Therefore, the quantity among the choices that is not a vector is Volume.

107. Answer: c

Explanation:

Understanding the Distance: 1 Kilometer Conversion

This explanation focuses on understanding the standard unit of distance, the kilometer, and its equivalent values in meters and centimeters.

Kilometer to Meter Conversion

A **kilometer**, often abbreviated as 'km', is a standard unit used to measure large distances. It is part of the metric system.

The fundamental relationship between kilometers and meters is:

$$1 \text{ km} = 1000 \text{ m}$$

This means that one kilometer is equivalent to one thousand meters. This is a key conversion factor in the metric system.

Kilometer to Centimeter Conversion

A **centimeter**, often abbreviated as 'cm', is a smaller unit of distance within the metric system. We know that:

$$1 \text{ m} = 100 \text{ cm}$$

To find the number of centimeters in one kilometer, we can use the two conversion factors:

$$1 \text{ km} = 1000 \text{ m}$$

And since each meter is 100 centimeters:

$$1 \text{ km} = 1000 \text{ m} \times 100 \frac{\text{cm}}{\text{m}} = 100,000 \text{ cm}$$

Therefore, one kilometer is equal to one hundred thousand centimeters.

Analyzing the Options for 1 km

Let's look at the given options in relation to our calculated conversions:

- **100 m:** This is incorrect. 1 km is equal to 1000 m, which is ten times larger than 100 m.
- **1000 cm:** This is incorrect. Since 1 m = 100 cm, 1000 cm is equal to $\frac{1000}{100} \text{ m} = 10 \text{ m}$. This is much smaller than 1 km.
- **1000 m:** This is correct. As established, 1 km is directly equivalent to 1000 m.
- **100 cm:** This is incorrect. 100 cm is equal to 1 m. This is significantly smaller than 1 km.

Conclusion on Distance Equivalence

Based on the standard metric system conversions, the distance of 1 kilometer is precisely equal to 1000 meters.

108. Answer: a

Explanation:

Acceleration: Understanding the Core Equation

Acceleration is a fundamental concept in physics that describes how an object's velocity changes over time. Velocity itself is a measure of speed and direction, so acceleration accounts for changes in either or both.

To calculate acceleration, we look at the difference between the final velocity and the initial velocity, and then divide that difference by the time it took for this change to occur. This gives us the rate at which the velocity is changing.

Deriving the Acceleration Formula

Let's break down the components:

- Let a represent the acceleration.
- Let v represent the final velocity of the object.
- Let u represent the initial velocity of the object (the velocity at the start).
- Let t represent the time interval over which the velocity changes.

The definition of acceleration (a) is the rate of change of velocity. Mathematically, this is expressed as the change in velocity (final velocity minus initial velocity) divided by the time taken for that change:

$$a = \frac{v-u}{t}$$

This equation is a cornerstone of kinematics, the study of motion.

Analyzing the Options Provided

Let's compare the standard formula with the options given:

Option 1: $a = \frac{v-u}{t}$ This equation correctly represents the definition of acceleration as the change in velocity ($v - u$) over time (t).

Option 2: $a = u + vt$ This is not a standard formula for acceleration and is dimensionally incorrect.

Option 3: $a = \frac{v+u}{t}$ This formula incorrectly adds the initial and final velocities instead of finding the difference. It does not represent acceleration.

Option 4: $a = \frac{v+u}{2}$ This formula calculates the average velocity when the acceleration is constant, not the acceleration itself.

Conclusion on the Correct Equation

Based on the definition and standard physics formulas, the correct equation for finding acceleration is the change in velocity divided by the time interval.

Therefore, the equation that accurately represents acceleration is:

$$a = \frac{v-u}{t}$$

109. Answer: d

Explanation:

Metallic Element Electronic Configuration Explained

Understanding the electronic configuration of elements helps us predict their chemical behavior. Specifically, the number of electrons in the outermost shell, known as valence electrons, is key to identifying whether an element is likely to be a metal or a non-metal. Generally, elements with fewer valence electrons tend to lose them easily, forming positive ions, which is characteristic behavior of metals.

Rules for Identifying Metals via Electronic Configuration

- **Valence Electrons:** Metallic elements typically have 1, 2, or sometimes 3 electrons in their outermost energy shell (valence shell).
- **Electron Loss:** Metals readily lose these valence electrons to achieve a stable electron configuration, often resembling that of the preceding noble gas.
- **Non-metals:** Conversely, non-metals usually have 4 or more valence electrons and tend to gain or share electrons.

- **Noble Gases:** Elements with a full outer shell (usually 8 electrons, except for Helium which has 2) are noble gases and are chemically inert (non-metals).

Analysis of Given Electronic Configurations

Let's examine each provided electronic configuration to determine which one represents a metallic element:

- **Option 1: 2, 8**
 - Total Electrons: $2 + 8 = 10$ electrons.
 - Outermost Shell (Valence Shell): Contains 8 electrons.
 - Element: This configuration corresponds to Neon (Ne), atomic number 10.
 - Classification: Neon is a noble gas, which is a non-metal. It has a stable, full outer shell.
- **Option 2: 2, 8, 7**
 - Total Electrons: $2 + 8 + 7 = 17$ electrons.
 - Outermost Shell (Valence Shell): Contains 7 electrons.
 - Element: This configuration corresponds to Chlorine (Cl), atomic number 17.
 - Classification: Chlorine has 7 valence electrons and is highly electronegative, meaning it tends to gain an electron. It is a non-metal (a halogen).
- **Option 3: 2, 8, 8**
 - Total Electrons: $2 + 8 + 8 = 18$ electrons.
 - Outermost Shell (Valence Shell): Contains 8 electrons.
 - Element: This configuration corresponds to Argon (Ar), atomic number 18.
 - Classification: Argon is a noble gas, like Neon, and is a non-metal with a stable electron configuration.
- **Option 4: 2, 8, 8, 2**
 - Total Electrons: $2 + 8 + 8 + 2 = 20$ electrons.
 - Outermost Shell (Valence Shell): Contains 2 electrons.
 - Element: This configuration corresponds to Calcium (Ca), atomic number 20.
 - Classification: Calcium has only 2 valence electrons. Metals tend to lose these outer electrons easily to form a stable ion (Ca^{2+} in this case). Therefore, Calcium is a metallic element (an alkaline earth metal).

Conclusion on Metallic Element Identification

Based on the analysis, the electronic configuration **2, 8, 8, 2** indicates an element with 2 valence electrons. This characteristic strongly suggests that the element is a metal, as it is likely to lose these two electrons to achieve a stable electron configuration. The other configurations represent noble gases (non-metals) or a halogen (non-metal).

110. Answer: a

Explanation:

Understanding the Properties of Group III and Group IV Oxides

This explanation details the typical chemical properties of oxides formed by elements in Group III (modern numbering: Group 13) and Group IV (modern numbering: Group 14) of the periodic table.

Group III Oxides Characteristics

Group III elements include Boron (B), Aluminum (Al), Gallium (Ga), Indium (In), and Thallium (Tl).

- **Boron Oxide (B_2O_3)**: Boron oxide is a non-metal oxide and exhibits **acidic** properties. It reacts with water to form boric acid (H_3BO_3).
- **Aluminum Oxide (Al_2O_3)**: Aluminum oxide is characteristic of a metal oxide found in the p-block. It famously demonstrates **amphoteric** behavior, meaning it can react with both acids and bases.
 - Reaction with acid: $Al_2O_3(s) + 6HCl(aq) \rightarrow 2AlCl_3(aq) + 3H_2O(l)$
 - Reaction with base: $Al_2O_3(s) + 2NaOH(aq) + 3H_2O(l) \rightarrow 2Na[Al(OH)_4](aq)$

- **Gallium Oxide (Ga_2O_3):** Similar to aluminum oxide, gallium oxide also shows **amphoteric** properties.
- **Indium and Thallium Oxides:** The oxides of Indium and Thallium tend to be more basic, but amphoteric character can still be observed under certain conditions.

Overall, while Boron oxide is acidic, the oxides of heavier Group III elements like Aluminum and Gallium are typically amphoteric.

Group IV Oxides Characteristics

Group IV elements include Carbon (C), Silicon (Si), Germanium (Ge), Tin (Sn), and Lead (Pb).

- **Carbon Oxides (CO_2 , CO):** Carbon dioxide (CO_2) is a classic example of an **acidic** oxide. It dissolves in water to form carbonic acid (H_2CO_3). Carbon monoxide (CO) is generally considered a neutral oxide, although it can react with certain transition metals.
- **Silicon Dioxide (SiO_2):** Silicon dioxide, also known as silica, is another distinctly **acidic** oxide. It reacts with strong bases but not typically with water.
- **Germanium Dioxide (GeO_2):** Germanium dioxide exhibits weak **acidic** or mild **amphoteric** properties.
- **Tin Oxides (SnO , SnO_2):** Tin(II) oxide (SnO) and Tin(IV) oxide (SnO_2) are both **amphoteric**. SnO_2 is more acidic than SnO .
- **Lead Oxides (PbO , PbO_2):** Lead(II) oxide (PbO) and Lead(IV) oxide (PbO_2) are also typically **amphoteric**. PbO reacts readily with acids and alkalis.

Summary of Usual Properties

Considering the trends across both Group III and Group IV:

- Group III oxides range from acidic (Boron) to amphoteric (Aluminum, Gallium).
- Group IV oxides range from acidic (Carbon, Silicon) to amphoteric (Germanium, Tin, Lead).

The **amphoteric** nature, meaning the ability to react as both an acid and a base, is a significant and common property observed for many oxides within these groups,

especially for the heavier elements and those towards the middle of the block.

Therefore, the most fitting description for the usual property of oxides of Group III and IV is **Basic and Acidic (i.e., Amphoteric)**.

111. Answer: c

Explanation:

Determining the Particle with Negative Charge

The question asks us to identify which of the listed options carries a **negative charge**. We need to understand the fundamental properties of X-rays, alpha particles, beta particles, and gamma rays.

Analyzing Radiation Types and Their Charges

Let's break down each option:

- **X-rays:** X-rays are a form of electromagnetic radiation. They are essentially high-energy photons. Photons are particles of light and have no mass and no electrical charge.
- **Alpha particles (α):** An alpha particle consists of two protons and two neutrons. It is identical to a helium nucleus. Since protons carry a positive charge and neutrons are neutral, an alpha particle has a net positive charge. The charge is $+2e$, where e represents the elementary charge.
- **Beta particles (β):** Beta particles are fast-moving particles emitted during radioactive decay. They can be either electrons (β^-) or positrons (β^+). An electron has a negative charge ($-e$), and a positron has a positive charge ($+e$). When the term "beta particle" is used without qualification, it usually refers to the electron (β^-) emitted from the nucleus, which carries a **negative charge**.
- **Gamma rays (γ):** Gamma rays are another form of electromagnetic radiation, similar to X-rays but typically with higher energy. They are also composed of photons and therefore have no mass and no electrical charge.

Summary Table of Charges

Here is a summary to compare the charges:

Radiation Type	Nature	Charge
X-rays	Electromagnetic Radiation (Photons)	Neutral (0)
Alpha particles (α)	Helium Nucleus (2 protons, 2 neutrons)	$+2e$ (Positive)
Beta particles (β)	Electron (e^-) or Positron (e^+)	$-e$ (Negative) or $+e$ (Positive)
Gamma rays (γ)	Electromagnetic Radiation (Photons)	Neutral (0)

Conclusion on Negative Charge

Based on the properties discussed, beta particles, specifically the electron (e^-) component (β^-), are the ones that carry a **negative charge**. The other options are either positively charged (alpha particles) or neutral (X-rays and gamma rays).

112. Answer: b

Explanation:

Mass Number Calculation

This explanation details how to determine the **mass number** of an atom given its number of protons, neutrons, and electrons, as stated in the question.

What is Mass Number?

The **mass number** is a fundamental concept in atomic structure. It represents the total count of particles within the atom's nucleus, specifically the protons and neutrons. It's important to note that electrons, although they have mass, are not included in this calculation because their mass is significantly smaller compared to that of protons and neutrons.

The formula to calculate the mass number is straightforward:

Mass Number = Number of Protons + Number of Neutrons

Using LaTeX for the mathematical expression:

$$\text{Mass Number} = \text{Protons} + \text{Neutrons}$$

Atom Composition Analysis

The question provides the following details about the specific atom we are considering:

- Number of Protons = 2
- Number of Neutrons = 2
- Number of Electrons = 2

To find the **mass number**, we need to focus on the number of **protons** and **neutrons**.

Calculating the Specific Mass Number

We apply the formula using the given values for protons and neutrons:

- Number of Protons = 2
- Number of Neutrons = 2

Performing the calculation:

Mass Number = 2 + 2

In LaTeX notation:

$$\text{Mass Number} = 2 + 2 = 4$$

The calculation shows that the **mass number** is 4.

Role of Electrons in Mass Number

The atom contains 2 electrons. While electrons contribute a small amount to the atom's total mass, the definition of **mass number** specifically excludes them. The mass number is solely determined by the count of nucleons (protons and neutrons) in the nucleus.

Final Result

Based on the calculation using the number of **protons** and **neutrons**, the **mass number** of the atom is 4.

Additionally, an atom with 2 protons is always Helium (He). This particular atom, with 2 protons and 2 neutrons, represents the isotope Helium-4, often written as ${}^4\text{He}$.

113. Answer: b

Explanation:

Understanding Wave Properties: Distance Between Crests and Troughs

This question asks about a specific characteristic of waves. Waves are disturbances that transfer energy through a medium or vacuum. They often exhibit repeating patterns, like high points (crests) and low points (troughs).

Defining Key Wave Terms

To answer this question, let's define the related terms:

- **Amplitude:** This refers to the maximum displacement or height of a wave's crest from its middle equilibrium position, or the depth of a trough from the equilibrium position. It essentially measures the wave's intensity or strength.

- **Wavelength:** This is the spatial period of the wave, meaning it's the distance over which the wave's shape repeats. Specifically, it's the distance measured between two consecutive identical points on the wave, such as from one crest to the next crest, or from one trough to the next trough. It is often denoted by the Greek letter lambda, λ .
- **Frequency:** This measures how often a wave cycle repeats its oscillation or how many waves pass a specific point per unit of time. It is usually measured in Hertz (Hz), where 1 Hz means one cycle per second.

Identifying the Correct Wave Measurement

The question specifically asks for the **distance** between two **successive crests** or two **successive troughs**.

- Looking at the definitions, this distance perfectly matches the definition of **Wavelength**.
- Amplitude is about the height, not the length.
- Frequency is about time, not distance.

Therefore, the distance between two consecutive crests or troughs is the definition of Wavelength.

Wavelength Explained

Imagine a wave in the ocean. If you stand on a pier and measure the distance from the peak of one wave to the peak of the very next wave, that distance is the wavelength.

Mathematically, if we consider a transverse wave like:

$$y(x, t) = A \sin(kx - \omega t + \phi)$$

Where:

- A is the amplitude.
- k is the wave number ($k = \frac{2\pi}{\lambda}$).
- ω is the angular frequency.

- ϕ is the phase constant.
- λ is the wavelength.

The distance between successive crests occurs when the argument of the sine function ($kx - \omega t + \phi$) increases by 2π . This leads directly to the relationship $k = \frac{2\pi}{\lambda}$, confirming that λ represents this distance.

Conclusion

Based on the standard definitions in wave physics, the distance between two successive crests or successive troughs is unequivocally termed as Wavelength.

114. Answer: c

Explanation:

Political Party Recognition in India

The process of recognizing political parties as either **National Parties** or **Regional Parties** in India is a crucial aspect of electoral governance. This recognition is granted based on specific performance criteria defined by the Election Commission of India.

Role of the Election Commission

The **Election Commission of India (ECI)** is the constitutional body responsible for administering election processes in India. A significant part of its mandate includes the recognition of political parties. The ECI lays down the rules and criteria that political parties must meet to be recognized.

Criteria for Recognition

Political parties are recognized based on their electoral performance in general elections and assembly elections. The main categories are:

- **National Party:** To be recognized as a national party, a party must meet stringent criteria related to its vote share and the number of seats won in Lok Sabha (House of the People) elections or State Legislative Assemblies, across multiple states.
- **State/Regional Party:** Parties that meet certain criteria in specific states but not nationally are recognized as State Parties or Regional Parties in those particular states.

Why Recognition Matters

Recognition as a National or Regional Party provides certain privileges, such as:

- Reservation of a reserved election symbol for the party's exclusive use.
- Allocation of party funding and expenditure limits.
- Special facilities during election campaigns, like access to broadcast time on state-owned media.

Conclusion on Authority

Therefore, the authority that accords recognition to various political parties in India as National or Regional Parties is the **Election Commission**. It plays a vital role in ensuring fair electoral practices and maintaining the integrity of the political system by defining and enforcing these recognition standards.

115. Answer: b

Explanation:

Understanding Fundamental Duties in the Indian Constitution

The Constitution of India includes a specific section on the duties of citizens. These are known as **Fundamental Duties**, outlined in **Part IV-A** of the Constitution under **Article 51A**. Introduced via the 42nd Amendment Act of 1976, based on the

recommendations of the Swaran Singh Committee, these duties serve as a constant reminder to citizens that they have certain responsibilities towards the nation, society, and fellow citizens, alongside the fundamental rights they enjoy.

Analyzing the Options on Constitutional Duties

Let's examine each option presented in the context of the Indian Constitution:

- **Separation of judiciary from executive:** This principle is enshrined in **Article 50** of the Constitution. It falls under the **Directive Principles of State Policy (DPSP)**, which guide the state in governance but are generally not enforceable by courts. It is not listed as a Fundamental Duty of citizens.
- **To value and preserve the rich heritage of our composite culture:** This statement directly corresponds to one of the duties specified in **Article 51A(f)**. This duty calls upon citizens to cherish and protect the diverse cultural traditions that form the heritage of India.
- **Free and compulsory education for children:** While promoting education is a constitutional value, this specific phrasing ("Free and compulsory education for children") is primarily reflected in the Directive Principles (Article 45). A related Fundamental Duty exists under **Article 51A(k)**, which states it is the duty of parents or guardians "to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years." The option's wording is broader than the specific parental duty mentioned in Article 51A(k).
- **All of the above:** Since the first option is a Directive Principle and not a Fundamental Duty, this choice is incorrect.

Identifying the Correct Fundamental Duty

Comparing the options with the text of Article 51A (Fundamental Duties):

- Option 1 relates to Article 50 (DPSP), not a Fundamental Duty.
- Option 2 is an exact match for the Fundamental Duty listed in Article 51A(f).
- Option 3 relates to Article 51A(k) but is phrased differently, resembling more closely a Directive Principle regarding education.

Therefore, the statement that accurately represents a **Fundamental Duty** as listed in the **Indian Constitution** is the one concerning the preservation of cultural heritage.

Conclusion: Fundamental Duty Identified

Based on the analysis, the duty to "value and preserve the rich heritage of our composite culture" is explicitly listed among the **Fundamental Duties** of citizens in the **Indian Constitution** under Article 51A(f).

116. Answer: c

Explanation:

Understanding the 1998 Nobel Prize in Economics

The Nobel Memorial Prize in Economic Sciences is a prestigious award given for outstanding contributions to the field of economics. It recognizes groundbreaking research and theories that have significantly advanced economic understanding.

Identifying the 1998 Economics Laureate

The question asks to identify the recipient of the **1998 Nobel Prize in Economics**. This prize specifically honors work that enhances our understanding of economic systems and principles.

Amartya Sen's Contribution

Amartya Sen was awarded the 1998 Nobel Prize in Economic Sciences. His work significantly contributed to welfare economics, social choice theory, economic history, and the study of poverty and famine. Key aspects of his contributions include:

- Developing sophisticated tools to measure economic welfare and understanding the underlying factors influencing it.

- His research on *social choice theory* explored how individual preferences can be aggregated into social decisions, highlighting potential inconsistencies and challenges.
- Studying the causes of famine and poverty, demonstrating that economic access and entitlements, not just food availability, play a crucial role.

Professor Sen's research provided a deeper understanding of economic decision-making at both individual and societal levels, emphasizing the importance of individual capabilities and freedoms.

Notable Economists in the Options

While the other economists listed – Solow, Marshall, and Paul Samuelson – are highly renowned figures in economics, they received Nobel Prizes in different years or are known for different seminal contributions:

- **Robert Solow:** Received the Nobel Prize in 1987 for his contributions to the theory of economic growth.
- **Alfred Marshall:** Though a foundational figure in neoclassical economics, he lived before the prize existed (died 1924).
- **Paul Samuelson:** Received the Nobel Prize in 1970 for elevating the analysis of equilibrium in economic theory.

Therefore, for the specific year 1998, the award was given to **Amartya Sen**.

117. Answer: a

Explanation:

Liberhan Commission Enquiry Context

The Liberhan Commission of Enquiry was a specific inquiry body established by the Indian government. Understanding its mandate is key to answering questions about its relevance.

Mandate of the Liberhan Commission

The Liberhan Commission was set up in 1999 by the Indian government. Its primary objective was to conduct an inquiry into the sequence of events that led to the **Demolition of Babri Masjid** in Ayodhya on December 6, 1992. The commission was tasked with investigating the actions of individuals and groups involved in the demolition and the security lapses, if any, that occurred during the incident.

Analysis of Options Related to the Enquiry

Let's examine the provided options to understand the correct context of the Liberhan Commission:

- **Option 1: Demolition of Babri Masjid**

This option accurately reflects the primary focus of the Liberhan Commission. The commission was specifically established to investigate the events surrounding the 1992 demolition.

- **Option 2: Construction of Ram Temple**

While the demolition of the Babri Masjid paved the way for discussions and legal battles regarding the construction of a Ram Temple at the site, the Liberhan Commission's mandate was not about the construction itself. Its scope was limited to the demolition event.

- **Option 3: Hawala Scam**

The Hawala scam involved allegations of illegal payments to politicians and public officials. This is a separate issue and unrelated to the Liberhan Commission's terms of reference.

- **Option 4: Bihar Fodder Scam**

The Bihar Fodder Scam was a major corruption scandal involving the embezzlement of public funds meant for cattle fodder in the Indian state of Bihar. The Liberhan Commission had no connection to this scam.

Conclusion on Commission's Relation

Based on its established mandate and the historical context, the Liberhan Commission of Enquiry is directly related to the **Demolition of Babri Masjid**. The commission spent many years gathering evidence and testimonies before submitting its report.

Therefore, the correct context for the Liberhan Commission of Enquiry is the Demolition of Babri Masjid.

118. Answer: a

Explanation:

Rajasthan Capital City Identification

This question asks to identify the capital city of the Indian state of Rajasthan. Knowing the capital cities of Indian states is important for understanding the administrative geography of the country.

What is a State Capital?

A state capital is the city where the main government administrative offices of a state are located. It's the center of the state's governance.

Rajasthan: Key Facts

Rajasthan is a prominent state in India, situated in the northwest region. It's known for its vibrant culture, historical sites like forts and palaces, and desert landscapes.

Evaluating the Options for Rajasthan's Capital

The question provides four cities as potential options for the capital of Rajasthan. Let's examine each one:

- **Jaipur:** This city is famously known as the 'Pink City'. It is the largest city in Rajasthan and functions as the state's primary administrative hub.
- **Udaipur:** Often referred to as the 'City of Lakes' or 'Venice of the East', Udaipur is renowned for its picturesque lakes and palaces. However, it is not the capital of Rajasthan.
- **Jodhpur:** Known as the 'Blue City', Jodhpur is famous for the impressive Mehrangarh Fort and its blue-painted houses. It's a major city but not the state capital.
- **Ajmer:** Ajmer is an important city in Rajasthan, known for its historical significance and the Dargah Sharif shrine. It is centrally located but is not the capital.

Conclusion: The Capital of Rajasthan

After reviewing the options and considering the administrative setup, **Jaipur** is correctly identified as the capital of Rajasthan. It is the seat of the state government, including the Vidhan Sabha (Legislative Assembly) and the Secretariat.

119. Answer: c

Explanation:

Gujarat Capital Identification

This section focuses on identifying the correct capital city of the Indian state of Gujarat. Knowing the capitals of Indian states is important for geography and general knowledge.

Understanding the Role of a State Capital

A state capital is the city where the state government's administrative offices are located. It functions as the center for political and administrative activities.

Examining the Options for Gujarat's Capital

The question asks to identify the capital of Gujarat from the given choices:

- **Godhra:** Godhra is a city in Gujarat, but it is not the state capital.
- **Baroda:** Baroda, more commonly known as Vadodara, is a major city in Gujarat and an important cultural center. However, it is not the capital of Gujarat.
- **Gandhi Nagar:** Gandhinagar is the designated capital city of Gujarat. It was planned and developed specifically to be the administrative center and is named in honor of Mahatma Gandhi.
- **Ahmedabad:** Ahmedabad is the largest and most populous city in Gujarat. It played a significant role historically and was the capital of Gujarat from 1960 to 1970 before the capital was moved to Gandhinagar.

Identifying the Correct Capital of Gujarat

Based on the geographical and administrative facts about Gujarat:

- Gandhinagar serves as the current capital, housing the state legislature and secretariat.
- While Ahmedabad is the largest city and a former capital, Gandhinagar is the present administrative hub.

Therefore, the correct capital of Gujarat among the options provided is **Gandhi Nagar**.

120. Answer: b

Explanation:

Understanding Pygmy Peoples and African River Basins

The question asks to identify the river basin associated with the native African tribe known as 'Pygmies'. These communities are famous for their short stature and their

traditional lifestyle as forest dwellers and hunter-gatherers.

Pygmies Geographic Distribution

The term 'Pygmies' refers to several distinct ethnic groups native to Central Africa, particularly the equatorial rainforests. They are characterized by their average height of less than 150 cm (4 ft 11 in). Their traditional territories span across several countries in Central Africa, deeply intertwined with the dense forest ecosystems.

River Basins in Africa and Pygmy Habitats

Let's examine the river basins mentioned in the options to understand the geographic context:

- **Niger River Basin:** This basin is primarily located in West Africa. While diverse ethnic groups inhabit this region, it is not the primary area associated with Pygmy communities.
- **Congo River Basin:** This option likely refers to the **Congo River Basin**, the second-largest river basin in the world, covering a vast area of Central Africa. This region is the traditional homeland of many Pygmy groups, such as the Mbuti, Twa, and Mbenga peoples. The dense tropical rainforests provide their traditional habitat.
- **Nile River Basin:** The Nile River flows north through northeastern Africa. The communities living along the Nile and its tributaries are culturally and geographically distinct from the Pygmy groups of Central Africa.
- **Zambezi River Basin:** Located in Southern Africa, the Zambezi River basin is known for features like Victoria Falls. The ethnic groups native to this region are different from the Pygmy peoples.

Pygmy Association with the Congo Basin

The Pygmy people are most famously and historically associated with the Congo River Basin (referred to as 'Congo' in the options). This vast basin, characterized by its extensive tropical rainforests, has been the ancestral home for various Pygmy groups for centuries. Their culture, subsistence practices (hunting and gathering),

and social structures are deeply connected to the forest environment found within this major river system.

The distribution of Pygmy communities is primarily within the equatorial forest belt of Central Africa, which corresponds largely to the Congo River Basin.

121. Answer: d

Explanation:

Country Production and Export Landscape

This question asks us to identify the world's largest producer and exporter of specific forest products: **soft timber** and **wood pulp**. Understanding the global trade in these resources involves looking at countries with significant forest coverage and well-developed forestry industries.

Understanding Soft Timber and Wood Pulp

Before determining the largest producer and exporter, let's clarify the terms:

- **Soft Timber:** This refers to timber derived from coniferous trees (like pines, spruces, and firs), which are typically evergreen and have needles rather than broad leaves. Softwood is widely used in construction, furniture making, and paper production due to its relatively fast growth and ease of processing.
- **Wood Pulp:** This is a cellulosic material derived from wood chips or other fibrous plant materials. It is the primary raw material for making paper, cardboard, and various other wood-based products. The production process involves breaking down the wood into fibres.

Canada's Leading Role in Soft Timber

Canada possesses one of the largest forest areas in the world, covering approximately 3.8 million square kilometers. A significant portion of these forests

consists of coniferous species, making Canada a major source of **soft timber**. The country has a highly developed forest products industry that utilizes these resources efficiently for both domestic consumption and international export.

Key factors contributing to Canada's position include:

- Vast coniferous forest resources, particularly in British Columbia and Eastern Canada.
- Advanced harvesting and processing technologies.
- Established infrastructure for transporting timber products globally.
- Strong demand for Canadian softwood in major markets like the United States.

Canada's Position in Wood Pulp Exports

Similarly, Canada is a global powerhouse in the production and export of **wood pulp**. The country's abundant timber resources provide the necessary raw materials for large-scale pulp manufacturing. Canadian pulp mills are significant suppliers to the international paper industry, especially for producing printing and writing papers, as well as tissue products.

Canada's strengths in the wood pulp market are:

- A large capacity for producing various types of wood pulp, including mechanical and chemical pulp.
- Proximity to major markets, particularly the US, which is a large consumer of paper products.
- High-quality pulp derived from its extensive softwood forests.

Comparative Analysis of Producing Countries

While countries like the USA, Sweden, and Norway are also significant players in the global timber and wood pulp markets, Canada generally holds the top position in terms of combined production and export volume for these specific commodities. The sheer scale of Canada's forest resources and its established export infrastructure give it a distinct advantage.

- **USA:** Has large forest resources and is a major producer, but often has higher domestic consumption, and its export focus might vary across different wood products.
- **Sweden and Norway:** While strong European producers, particularly known for sustainable forestry practices and high-quality products, their overall volume tends to be smaller compared to Canada due to land area and resource scale differences.

Therefore, considering the combined aspects of being the **largest producer** and **exporter** of both **soft timber** and **wood pulp**, Canada stands out globally.

122. Answer: b

Explanation:

Anita Roddick: Author Recognition

This question asks to identify the book authored by **Anita Roddick**. Anita Roddick was a prominent British businesswoman, activist, and environmentalist, best known as the founder of The Body Shop.

Exploring Anita Roddick's Literary Contributions

Anita Roddick penned several books throughout her career, sharing her unique philosophy on business, ethics, and activism. It's important to identify the correct title from the options provided.

Identifying the Correct Book: "Business as Usual"

"**Business as Usual**" is indeed a significant book written by Anita Roddick. Published in 1993, this book delves into her experiences building The Body Shop and outlines her unconventional approach to business, emphasizing ethical practices, environmental consciousness, and social responsibility. It serves as a testament to her belief that businesses can be a force for good in the world.

Analysis of Other Options

- **"The Untold Story"**: This title is not recognized as a primary work authored by Anita Roddick.
- **"Business as Unusual"**: While the title sounds similar and reflects Roddick's philosophy, the correct title of her book is "Business as Usual".
- **"Tears and Smiles"**: This title is not associated with Anita Roddick's authorship.

Therefore, based on Anita Roddick's published works, **"Business as Usual"** is the correct answer.

Key Takeaway: Remembering Anita Roddick's connection to The Body Shop and her advocacy for ethical business practices can help recall her notable book, "Business as Usual".

123. Answer: c

Explanation:

Samajik Adhikarita Smriti Divas: Celebration Date

The question asks for the date on which **Samajik Adhikarita Smriti Divas** is celebrated. This day is dedicated to recognizing and promoting social rights and empowerment.

Understanding the Celebration Date

Samajik Adhikarita Smriti Divas is observed annually on a specific date in March. It's important to know these dates for awareness and participation in related events.

Identifying the Correct Date

Let's review the options provided:

- March, 18

- March, 19
- March, 20
- March, 21

Upon reviewing the established dates for national observances, **Samajik Adhikarita Smriti Divas** is celebrated on **March 20th**.

Conclusion on Samajik Adhikarita Smriti Divas

Therefore, the correct option corresponds to March 20.

124. Answer: c

Explanation:

Understanding World Consumers Rights Day Celebration

The question asks for the specific date when World Consumers Rights Day is observed globally.

Significance of World Consumers Rights Day

World Consumers Rights Day is an important annual observance dedicated to raising awareness about consumer rights and needs. It's a day to highlight the importance of protecting consumers from unfair practices, ensuring product safety, and advocating for fair trade and market practices. Consumers worldwide look forward to this day to understand their rights and responsibilities.

Key Date for Consumers Rights Day

The specific date dedicated to celebrating World Consumers Rights Day is consistently observed on **March 15** every year. This date was chosen to commemorate the day when U.S. President John F. Kennedy first addressed the

issue of consumer protection in a special message to the U.S. Congress in 1962. He officially recognized the importance of consumer rights, making him one of the first world leaders to do so.

The specific options provided were:

- March, 13
- March, 14
- March, 15
- March, 16

Based on the established global observance, March 15 is the correct date.

Historical Context and Global Observance

The idea of a global consumer rights day gained momentum over the years. Consumers International, a membership organization of consumer groups around the world, officially established March 15 as World Consumers Rights Day in 1983. Since then, it has become a significant occasion for consumer advocacy groups worldwide to campaign on specific issues affecting consumers.

125. Answer: d

Explanation:

Chief Minister Launches Annadanam Scheme

This question asks to identify the specific state whose **Chief Minister** has launched the **Annadanam Scheme**. The scheme was reportedly initiated at 63 selected temples.

Details of the Annadanam Scheme Launch

The **Annadanam Scheme** is a significant initiative focused on providing free meals to devotees. This program aims to support pilgrims visiting temples, ensuring they

are provided with food as part of their religious experience.

The launch of this scheme was carried out by the **Chief Minister of Tamil Nadu**. The initiative specifically targeted 63 temples selected for the implementation of the scheme.

Key Information Summary

- **Scheme:** Annadanam Scheme
- **State:** Tamil Nadu
- **Action:** Launched by the Chief Minister
- **Coverage:** 63 selected temples

This initiative reflects a commitment to enhancing pilgrim facilities and promoting spiritual tourism within **Tamil Nadu**.

126. Answer: a

Explanation:

Operation Anaconda: Key US Ground Operation in Afghanistan

The history of the US military involvement in Afghanistan includes several significant ground operations. This question focuses on identifying the largest ground engagement initiated by US forces within Afghanistan.

Understanding Operation Anaconda

Operation Anaconda was a major military engagement that took place in March 2002. It is recognized as one of the most significant and largest ground operations undertaken by US and coalition forces in Afghanistan during the early years of the conflict.

- **Context:** Launched in the aftermath of the initial 2001 invasion of Afghanistan, Operation Anaconda aimed to dismantle remaining Al-Qaeda and Taliban strongholds.
- **Location:** The operation was centered in the Shahi-Kot Valley, located in the Paktia Province of Afghanistan, near the Pakistani border.
- **Objective:** The primary goal was to encircle and destroy an estimated 1,000 to 2,000 Al-Qaeda and Taliban fighters who had gathered in the valley.
- **Scale:** It involved a substantial force, including around 1,700 US soldiers and approximately 1,000 coalition troops from allied nations, supported by Afghan military units. The operation featured intense combat, air support, and ground maneuvers.
- **Significance:** Operation Anaconda was the first major ground offensive of its kind in the Afghanistan war, involving a large concentration of troops fighting in rugged terrain against a determined enemy.

Analysis of Options

To determine the correct answer, let's evaluate each option provided:

- **Operation Anaconda:** As detailed above, this operation fits the description of the biggest US ground operation in Afghanistan due to its scale and intensity.
- **Operation Osama Bin Laden:** This is not the recognized codename for a major US ground operation in Afghanistan. While capturing or killing Osama bin Laden was a key objective of the broader war effort, specific operations had different codenames. For instance, the raid that killed him in Pakistan was called Operation Neptune Spear.
- **Operation United States:** This is not a known codename for any significant US military ground operation conducted in Afghanistan.
- **Operation Blue Star:** This was a military operation undertaken by the Indian Army in June 1984. It targeted Sikh militants occupying the Golden Temple in Amritsar, India. This operation is unrelated to US military actions in Afghanistan.

Conclusion

Considering the historical context and scale of military engagements, **Operation Anaconda** stands out as the most fitting description for the biggest US ground operation in Afghanistan among the choices provided.

127. Answer: a

Explanation:

Patna Municipal Corporation Ward Count Explained

The Patna Municipal Corporation (PMC) is the local administrative body responsible for the civic amenities and governance of Patna, the capital city of Bihar. A key aspect of its structure is the division of the city into multiple electoral wards.

These **wards** serve as the fundamental units for local elections and administration. Each ward typically elects a representative, known as a ward commissioner, to the municipal corporation, ensuring local representation in decision-making processes. The total count of these wards reflects the extent of the corporation's electoral and administrative divisions.

Information regarding the administrative structure indicates that the Patna Municipal Corporation comprises a specific number of wards. Based on the context provided, this number is 57. This means the city is divided into 57 distinct electoral districts for the purpose of municipal governance.

Key details about the Patna Municipal Corporation wards:

- The PMC is divided into electoral **wards** for representation.
- The number of wards determines the number of elected commissioners.
- The specific count of 57 is an important characteristic of the PMC's structure.

128. Answer: d

Explanation:

Abilympics: A Global Skills Competition for People with Disabilities

The question asks to identify the specific name for an event analogous to the Olympics, but organized for individuals with disabilities. While the term "Olympics for the disabled" might popularly evoke the Paralympics (which are athletic competitions), the options provided suggest a different, though related, event.

Exploring the Term Abilympics

Among the choices given, **Abilympics** is the correct term for a specific type of international competition focused on the skills and talents of people with disabilities.

- **Etymology:** The name **Abilympics** is a blend of the words "**Ability**" and "**Olympics**".
- **Definition:** It refers to the **International Abilympics**, which are major events showcasing the vocational skills of people with physical, intellectual, or sensory impairments.
- **Focus:** Unlike the Paralympics, which centers on sports, the Abilympics highlight professional abilities and talents in various fields such as information technology, creative arts, culinary skills, floristry, and many others.
- **Objective:** The core aim of the Abilympics is to foster the social and economic inclusion of people with disabilities by demonstrating their capabilities and promoting their employment opportunities.
- **History:** The first Abilympics competition took place in 1981 in Tokyo, Japan.

Distinguishing Abilympics from Paralympics

It's useful to note the difference:

- **Paralympics:** Primarily an international multi-sport event for athletes with physical disabilities.

- **Abilympics:** Primarily an international skills competition celebrating vocational abilities for people with various disabilities.

Therefore, the event known as the **Abilympics** specifically celebrates the diverse **abilities** and vocational talents of people with disabilities on an international stage.

129. Answer: c

Explanation:

Understanding Japan's Crown Princess

The question asks to identify the name of Japan's Crown Princess. The Imperial Family of Japan has specific members, and knowing their names is key to answering this question correctly. The current Emperor Naruhito and Empress Masako have one child, a daughter.

Identifying the Correct Name: Princess Aiko

Let's examine the options provided to determine the correct name:

- **Toko:** This is not the name of Japan's Crown Princess.
- **Tono:** This is not the name of Japan's Crown Princess.
- **Aiko:** This is the correct name. Princess Aiko is the only child of Emperor Naruhito and Empress Masako. She holds the title Princess Toshi (トシ, Toshi-no-miya), but is commonly known as Princess Aiko (愛子, Aiko Naishinnō).
- **Piko:** This is not the name of Japan's Crown Princess.

Key Information about Japan's Princess

Princess Aiko, born on December 1, 2001, is the daughter of the current Emperor Naruhito and Empress Masako of Japan. She is a member of the Imperial House of Japan. While she was Crown Princess before her father's ascension to the

Chrysanthemum Throne, she is currently styled as Her Imperial Highness Princess Aiko.

130. Answer: b

Explanation:

Understanding the Supreme Court's Contempt of Court Ruling in March 2002 The question asks to identify the individual convicted by the Supreme Court of India for contempt of court in March 2002. This situation highlights the power of the judiciary to maintain its authority and ensure the proper administration of justice.

Supreme Court Convicts Arundhati Roy for Contempt of Court

The Supreme Court of India, in March 2002, convicted renowned author and activist **Arundhati Roy** for committing contempt of court. This conviction stemmed from her actions and statements related to a specific legal case and her perceived criticism of the judiciary.

Details of the 2002 Contempt Case

The case against Arundhati Roy involved multiple instances that the Supreme Court deemed as contemptuous:

- **Criticism of Judicial Proceedings:** Roy had expressed strong views regarding the Supreme Court's proceedings and the perceived inaction of the government concerning the Narmada dam project.
- **Interference Allegations:** During a protest related to the dam project, Roy allegedly provided shelter to activists accused of contempt, leading to further legal scrutiny.
- **Scandalizing the Court:** The Supreme Court found that her statements and actions amounted to scandalizing the court, thereby undermining its authority and dignity.

Legal Proceedings and Verdict

The Supreme Court considered the matter seriously, leading to a conviction based on its assessment of Roy's conduct.

- **Charges:** Roy faced charges related to criminal contempt, specifically for actions that were seen as lowering the authority of the court or interfering with the administration of justice.
- **Supreme Court's Decision:** On March 6, 2002, the Supreme Court delivered its verdict, finding Arundhati Roy guilty of contempt of court.
- **Sentence:** She was sentenced to simple imprisonment for one day and fined ₹2,000. The court emphasized the need to uphold the majesty of the law and deter others from actions that could undermine the judiciary.

What Constitutes Contempt of Court?

Contempt of court refers to conduct that defies the authority of a court of law or interferes with the administration of justice. In India, contempt of court is broadly categorized into two types:

- **Civil Contempt:** This involves the willful disobedience of any decree, direction, order, writ, or other process of a court, or willful breach of an undertaking given to a court.
- **Criminal Contempt:** This includes any publication (written or spoken words, signs, or visible representations) or the doing of any other act whatsoever which:
 - Scandalizes the court;
 - Tends to bring down the authority of the court;
 - Interferes with the due course of judicial proceedings;
 - Obstructs the administration of justice.

In Arundhati Roy's case, the conviction primarily related to the criminal contempt category, specifically for scandalizing the court.

Relevance to Other Options

While Shabana Azmi is a prominent actor and social activist, Arun Jaitley was a senior lawyer and former Union Minister, and Kesavananda Bharti is known for the landmark Kesavananda Bharati case establishing the 'basic structure doctrine' of the Constitution, none of them were convicted by the Supreme Court for contempt of court in March 2002. The specific conviction in March 2002 was against Arundhati Roy.

131. Answer: a

Explanation:

The correct answer is **S. Krishnaswamy**

★ Key Points

- **S. Krishnaswamy :-**
 - He was the 19th Air Chief Marshal of India.
 - He was commissioned in the Indian Air force in 1961.
 - He flew the Gnat fighter aircraft during the 1965 Indo-Pak War and was awarded Mention-in-Despatches for his contribution.
 - He was operational on a number of combat aircraft including the Mirage 2000.
 - He has more than 4000 hours of flying experience and has captained over 30 varieties of aircraft and helicopters.
 - A graduate of Defence Services Staff College, he is an alumnus of the National Defence College.
 - He is a recipient of Param Vishisht Seva Medal, Atishisht Seva Medal and a bar to Vayushena Medal.

★ Additional Information

- **Krishna Kant:-**
 - He was the 10th Vice President of India from 1997 to 2002.
 - He was also the governor of Andhra Pradesh from 1990 to 1997.
 - He also worked as Governor of Tamil Nadu (additional charge) from 22.12.1996 to 25.1.1997.

- He was a member of Lok Sabha from **Chandigarh** and a Member of Rajya Sabha from Haryana.
- **Vishnu Kant:-**
 - He was the **governor** of Uttar Pradesh from **2000 to 2004**.
 - He also served as the **governor of Himachal Pradesh** from **1999 to 2000**.

132. Answer: b

Explanation:

Understanding the New Delhi–Patna Superfast Train Service The question asks to identify the specific name of a new superfast train service launched between New Delhi and Patna, with an effective start date of February 2, 2002. This involves recognizing the correct train service based on its route and historical introduction date. **Analyzing Train Service Options** Let's examine the provided options to determine the correct train:

- **Sabarmati Express:** This train typically connects Ahmedabad (Gujarat) to Varanasi or Muzaffarpur, not directly linking New Delhi and Patna as its primary route. Therefore, it is unlikely to be the correct answer.
- **Sampoorna Kranti Express:** This train service is well-known for connecting Patna Junction (Bihar) with Delhi Junction (New Delhi). Historical records confirm its introduction around the specified period, February 2002. The name itself, "Sampoorna Kranti," signifies "Total Revolution," often associated with social and political movements, making it a notable name for a significant route.
- **Patliputra Express:** Patliputra is the ancient name for Patna. While a train with this name might exist or have existed, its primary route might differ, or its introduction date may not align with February 2, 2002, for the specific New Delhi–Patna superfast service. Trains like the Patliputra Express often connect Patna to cities like Mumbai or Chandigarh.
- **Shalimar Express:** Shalimar is a location near Kolkata. Trains originating from or passing through Shalimar typically serve eastern India. This name does not align with a train specifically introduced between New Delhi and Patna in 2002.

Identifying the Correct Train Name Based on the route (New Delhi to Patna) and the introduction date (February 2, 2002), the **Sampoorna Kranti Express** is the correct identification. This train was specifically introduced to enhance connectivity between the national capital and the capital of Bihar, operating as a superfast service. **Key Details Summary**

- **Route:** New Delhi – Patna
- **Service Type:** Superfast Train
- **Introduction Date:** Effective February 2, 2002
- **Correct Train Name:** Sampoorna Kranti Express

133. Answer: d

Explanation:

Honorary Degree Conferred by Aligarh Muslim University

This solution explains the specific recognition awarded by Aligarh Muslim University (AMU) in February 2002 to one of the prominent actors listed in the options.

Aligarh Muslim University Recognition in February 2002

Aligarh Muslim University (AMU) is known for honouring eminent personalities by awarding honorary degrees, denoted as (*Honoris causa*). In February 2002, the university bestowed this significant honour upon a celebrated figure from the Indian film industry.

Identifying the Recipient of the Honorary Degree

The question asks to identify which actor received the honorary degree from Aligarh Muslim University in February 2002. Examining the provided options:

- Amitabh Bachchan

- Amir Khan
- Shatrughan Sinha
- Dilip Kumar

The actor who was conferred this distinction during that period was **Dilip Kumar**.

Details on Dilip Kumar's Honorary Degree

Legendary actor **Dilip Kumar** was recognized by Aligarh Muslim University with an honorary degree (*Honoris causa*) in February 2002. This award celebrated his immense and lasting contributions to Indian cinema, acknowledging his status as a cultural icon.

Context Regarding Other Actors

While Amitabh Bachchan, Amir Khan, and Shatrughan Sinha are all highly respected actors with significant careers, the specific honorary degree from Aligarh Muslim University in February 2002 was awarded to Dilip Kumar.

Conclusion on AMU Honorary Degree

Therefore, the actor who received the honorary degree (*Honoris causa*) from Aligarh Muslim University in February 2002 was **Dilip Kumar**.

134. Answer: a

Explanation:

Details on the 2002 ICC Champions Trophy Host

This explanation focuses on identifying the correct host nation for the **ICC Champions Trophy** tournament that took place in **September 2002**. The ICC Champions Trophy is a major international championship for One Day International (ODI) cricket, organised by the International Cricket Council (ICC).

Identifying the Correct Host Country

The question requires pinpointing the country responsible for hosting the **ICC Champions Trophy** during September 2002. Reviewing the available options helps in determining the correct answer:

- Sri Lanka
- Pakistan
- India
- West Indies

Historical Information on the 2002 Champions Trophy

The official host nation for the 2002 edition of the **ICC Champions Trophy** was **Sri Lanka**. The tournament was a significant event in the cricket calendar.

Key details regarding the **September 2002 Champions Trophy**:

- **Host Country:** Sri Lanka
- **Tournament Year:** 2002
- **Event Timing:** The matches were held primarily in September 2002.
- **Significance:** This tournament featured the top cricketing nations competing for the prestigious title.
- **Final Result:** Notably, the final match between India and Sri Lanka was affected by rain and declared a tie, making both teams joint winners.

Analysis of Options

Considering the facts about the **2002 ICC Champions Trophy**:

- **Sri Lanka** is confirmed as the host.
- India participated and reached the final, but it was not the host nation.
- Pakistan and West Indies, while strong cricket teams, were not the hosts for this particular tournament in 2002.

Therefore, based on the historical records of the **ICC Champions Trophy**, Sri Lanka hosted the event in 2002.

135. Answer: b

Explanation:

Oscar 2002 Best Foreign Language Film Identification

This question concerns the Academy Awards (Oscars), specifically asking which film won the award for Best Foreign Language Film in the year 2002. This category honors excellence in non-English language films produced outside the United States.

The 74th Academy Awards Context

The 2002 Oscars ceremony, officially the 74th Academy Awards, celebrated the achievements of films released in 2001. The Best Foreign Language Film category is highly competitive, showcasing diverse cinematic talent from around the globe.

Analyzing the Winning Film: No Man's Land

The film awarded the Oscar for Best Foreign Language Film in 2002 was **No Man's Land**.

- **About the Film:** *No Man's Land* is a Bosnian film directed by Danis Tanović.
- **Significance:** It garnered significant critical acclaim for its compelling narrative, which is set during the Bosnian War and centers on two enemy soldiers stuck in a dangerous 'no man's land' between trenches. The film is noted for its powerful anti-war themes delivered with elements of dark humor and intense drama.
- **Award Recognition:** This win marked a significant achievement for Bosnian cinema on the international stage.

Evaluation of Other Options

Let's consider why the other film options were not the winner in this specific category:

- **Lagaan:** This acclaimed Indian film was nominated for Best Foreign Language Film in 2002. It received considerable international recognition and praise but ultimately did not secure the Oscar in this category, losing to *No Man's Land*.
- **A Beautiful Mind:** While *A Beautiful Mind* was a major winner at the 2002 Oscars, taking home the award for Best Picture, it is an American English-language film. As such, it was ineligible for consideration in the Best Foreign Language Film category.
- **The Lord of the Rings:** This likely refers to *The Lord of the Rings: The Fellowship of the Ring*, which was prominent at the 2002 Oscars, winning multiple awards in technical and major categories like Best Visual Effects. However, being an English-language production, it was not eligible for the Best Foreign Language Film award.

In summary, the Oscar for Best Foreign Language Film at the 74th Academy Awards in 2002 was presented to the Bosnian film **No Man's Land**.

136. Answer: a

Explanation:

This solution explains the location of the Commonwealth Heads of Government Meeting (CHOGM) that occurred in 2002.

CHOGM 2002 Meeting Location Identified

The Commonwealth Heads of Government Meeting (CHOGM) is a major event where leaders from Commonwealth countries meet to discuss important global and Commonwealth issues. The question asks specifically about the venue for the CHOGM-2002 meeting, which included **51 members**.

It is important to know the specific locations where these significant international gatherings take place.

Determining the 2002 CHOGM Venue

- The **CHOGM-2002** summit, attended by leaders representing **51 members** of the Commonwealth, was hosted in **Coolum**.
- **Coolum** is located in Queensland, Australia. This event served as a crucial platform for diplomatic discussions and policy formulation among the member states.

Contextualizing CHOGM Venues

To provide context and differentiate the correct venue, consider these previous CHOGM locations:

- The CHOGM meeting in 2001 was held in Copenhagen.
- The CHOGM meeting in 1991 took place in Harare.

Based on the historical records of Commonwealth meetings, the location for the specific **CHOGM-2002** event involving **51 members** was confirmed as **Coolum**.

137. Answer: c

Explanation:

India's Delegate at SAARC Information Conference

The question asks to identify the individual who represented India at the Second SAARC Information Ministers' Conference. This significant international meeting took place in Islamabad, Pakistan, during March 2002. SAARC stands for the South Asian Association for Regional Cooperation, an organization that brings together countries in South Asia to foster cooperation on economic, social, and cultural issues.

The Information Ministers' Conference specifically focuses on enhancing collaboration and understanding in the fields of media, broadcasting, and information exchange among the SAARC member nations. These discussions are vital for promoting regional connectivity and shared media policies.

At the Second SAARC Information Ministers' Conference held in March 2002, India was represented by **Sushma Swaraj**. As a prominent leader in Indian politics, she held key ministerial portfolios during that period. Her role as the Union Minister for Information and Broadcasting made her the natural choice to represent India at this conference. Her presence underscored India's active participation and commitment to strengthening regional cooperation in the information sector within the SAARC framework.

The participation of ministers like Sushma Swaraj in such forums is crucial for bilateral and multilateral dialogues, helping to shape policies and initiatives that benefit all member countries. The discussions in Islamabad likely covered various aspects of media development, digital communication, and information sharing strategies pertinent to the South Asian region.

138. Answer: a

Explanation:

Chairman of the 2000 Constitutional Review Commission

This section explains the identification of the Chairman for the Constitutional Review Commission that was established in February 2000.

Understanding the Constitutional Review Commission

In February 2000, a significant commission was set up by the government with the purpose of reviewing the overall working of the Indian Constitution. The goal was to assess its performance and suggest necessary modifications.

Identifying the Chairman: Key Role

The question asks to identify the specific individual who chaired this particular commission. This involves recalling or researching the members appointed to lead

such important national reviews.

The person appointed as the Chairman for the Constitutional Review Commission set up in February 2000 was **M. N. Venkatachaliah**.

Details on Chairman M. N. Venkatachaliah

M. N. Venkatachaliah served as the Chairman of this commission. He was a distinguished figure in the Indian legal system, having previously held the position of the Chief Justice of India. His experience was invaluable in guiding the review process.

Analysis of Other Provided Options

The options provided include other prominent legal personalities, but they were associated with different commissions or roles:

- **R. S. Sarkaria:** He is well-known for chairing the Sarkaria Commission, which specifically dealt with Centre-State governmental relations in India.
- **Krishna Iyer:** Justice V. R. Krishna Iyer was a former Judge of the Supreme Court of India, celebrated for his significant contributions to judicial activism and legal reforms. He was not the chairman of the 2000 Constitutional Review Commission.
- **Fatima Bibi:** Justice M. Fathima Beevi holds the distinction of being the first woman judge of the Supreme Court of India. Her judicial career was notable, but she did not chair this specific commission.

Therefore, considering the specific mandate and establishment date (February 2000), **M. N. Venkatachaliah** correctly identifies the Chairman of the Constitutional Review Commission.

139. Answer: b

Explanation:

CPI(M) General Secretary Election: Hyderabad Congress 2002

This question asks to identify the individual elected as the General Secretary of the Communist Party of India (Marxist) for the fourth consecutive term during the 17th Party Congress held in Hyderabad in March 2002. Understanding the context of this specific political event and the roles of the leaders mentioned in the options is key to finding the correct answer.

Context: 17th CPI(M) Party Congress

The 17th Party Congress of the CPI(M) was a significant meeting where important decisions regarding the party's leadership and direction were made. The congress took place in **Hyderabad** in **March 2002**. A major outcome was the election of the party's General Secretary.

Analysis of Candidates and the Role of General Secretary

We need to evaluate each option based on their political affiliation and known roles around 2002:

- **Chandrababu Naidu:** At the time of the 2002 Congress, N. Chandrababu Naidu was a prominent political leader, serving as the Chief Minister of Andhra Pradesh. He was associated with the Telugu Desam Party (TDP), not the CPI(M). Therefore, he could not have been elected as the General Secretary of the CPI(M).
- **Harkishan Singh Surjeet:** Harkishan Singh Surjeet was a senior and influential leader of the CPI(M). He held the position of General Secretary of the party from 1992. His re-election at the 17th Party Congress in Hyderabad in March 2002 confirmed him in this post for the fourth consecutive term (1992–1995, 1995–2000, 2000–2002, and the term starting 2002).
- **Khushwant Singh:** Khushwant Singh was a highly respected and well-known Indian author, novelist, lawyer, and journalist. He was not an active politician affiliated with the CPI(M) leadership.

- **Mamta Banerjee:** Mamta Banerjee is a prominent political leader from West Bengal, known for founding and leading the Trinamool Congress party. She has never been associated with the CPI(M) leadership.

Confirmation of Leadership Role

The historical records clearly indicate that **Harkishan Singh Surjeet** was the General Secretary of the CPI(M) during the period in question. The 17th Party Congress in Hyderabad in March 2002 was indeed the venue where he was re-elected, marking his fourth consecutive term as the party's chief.

Key Takeaway: CPI(M) Leadership in 2002

The election of Harkishan Singh Surjeet for a fourth consecutive term as General Secretary at the **Hyderabad 17th Party Congress in March 2002** highlights his sustained leadership within the **CPI(M)** during that era.

140. Answer: a

Explanation:

National Human Rights Commission Chairman Identification

This solution aims to identify the current Chairman of the National Human Rights Commission (NHRC) based on the provided options. The NHRC is a key institution in India responsible for the protection and promotion of human rights.

Understanding the National Human Rights Commission (NHRC)

The National Human Rights Commission (NHRC) of India is a statutory body established on 12th October 1993 under the Protection of Human Rights Act, 1993 (PHRA). It is tasked with safeguarding human rights, acting as a watchdog against violations, and recommending measures for their protection.

Analyzing the Options for NHRC Chairman

Let's examine each option provided:

- **Arun Kumar Mishra:** This name corresponds to the individual who currently holds the position of Chairperson of the NHRC. Justice Arun Kumar Mishra assumed the role on April 25, 2021.
- **P N Bhagwati:** Justice P.N. Bhagwati was a former Chief Justice of India. While a significant figure in Indian jurisprudence, particularly known for Public Interest Litigation, he did not serve as the Chairman of the NHRC.
- **Ahmadi:** This option likely refers to Justice A. M. Ahmadi, who served as the Chief Justice of India from 1994 to 1997. He was not the Chairman of the NHRC. (Note: Justice M.N. Venkatachaliah, the first Chairman of NHRC, was also a former CJI).
- **H L Dattu:** Justice H. L. Dattu served as the Chairperson of the NHRC after Justice C. Girish Raja and before the current chairperson. He was the 8th Chairperson, holding the office from February 2019 to December 2020. While he did chair the NHRC, he is not the current holder of the office.

Correct Chairman of the NHRC

Based on the current appointments and the functions of the NHRC, Justice Arun Kumar Mishra is the serving Chairman. He succeeded Justice H. L. Dattu.

Conclusion

Therefore, the correct option identifying the current Chairman of the National Human Rights Commission is Arun Kumar Mishra.

Key Term Focus: The question specifically asks for the *Chairman* of the *National Human Rights Commission*. Identifying the individual currently holding this specific designation is crucial.

Appointment Context: Justice Arun Kumar Mishra was appointed as the Chairperson based on the recommendations of a high-level committee, following the established procedure for appointing the head of the NHRC.

141. Answer: d

Explanation:

Calculating the Average Price Increase for a Commodity

This guide explains how to determine the average price increase of a commodity over multiple periods, given specific percentage changes for each period.

Understanding the Problem Statement

We need to find the **average price increase** for a commodity between 1995 and 1998. The commodity experienced the following sequential price changes:

- A 5% increase from 1995 to 1996.
- An 8% increase from 1996 to 1997.
- A 77% increase from 1997 to 1998.

The period from 1995 to 1998 spans three years, with a price change occurring in each year.

Step-by-Step Calculation of Consecutive Price Changes

Let's track the price changes starting with an initial price in 1995. Assume the price in 1995 is ' P '.

1. Price Change (1995 to 1996)

A 5% increase means the new price is $100\% + 5\% = 105\%$ of the previous price. This is equivalent to multiplying by a factor of $(1 + 0.05) = 1.05$.

$$\text{Price in 1996} = P \times \left(1 + \frac{5}{100}\right) = P \times 1.05$$

2. Price Change (1996 to 1997)

An 8% increase on the 1996 price means multiplying by a factor of $(1 + 0.08) = 1.08$.

$$\text{Price in 1997} = (\text{Price in 1996}) \times (1 + \frac{8}{100})$$

$$\text{Price in 1997} = (P \times 1.05) \times 1.08$$

First, calculate the combined factor for the first two years: $1.05 \times 1.08 = 1.134$.

Therefore, Price in 1997 = $P \times 1.134$. This represents a total increase of 13.4% from 1995 to 1997.

3. Price Change (1997 to 1998)

A 77% increase on the 1997 price means multiplying by a factor of $(1 + 0.77) = 1.77$.

$$\text{Price in 1998} = (\text{Price in 1997}) \times (1 + \frac{77}{100})$$

$$\text{Price in 1998} = (P \times 1.134) \times 1.77$$

Now, calculate the final combined factor: $1.134 \times 1.77 = 2.00718$.

$$\text{So, Price in 1998} = P \times 2.00718.$$

Calculating the Total Percentage Increase

The price in 1998 is 2.00718 times the original price in 1995.

The total increase in price is the difference between the final price and the initial price:

$$\text{Total Increase} = \text{Price in 1998} - \text{Price in 1995} = 2.00718P - P = 1.00718P$$

To express this total increase as a percentage of the initial price:

$$\text{Total Percentage Increase} = \frac{\text{Total Increase}}{\text{Initial Price}} \times 100\%$$

$$\text{Total Percentage Increase} = \frac{1.00718P}{P} \times 100\% = 100.718\%$$

This means the commodity's price more than doubled between 1995 and 1998.

Determining the Average Price Increase

The question asks for the **average price increase** over the 3-year period (1995 to 1998). A common way to interpret this is to find the total percentage increase and divide it by the number of periods over which the changes occurred.

The number of periods (years) for the price changes is 3 (1995–96, 1996–97, 1997–98).

$$\text{Average Price Increase} = \frac{\text{Total Percentage Increase}}{\text{Number of Periods}}$$

$$\text{Average Price Increase} = \frac{100.718\%}{3}$$

Calculating the value: $\frac{100.718}{3} \approx 33.5726...\%$

Comparing the Result with Options

The calculated average price increase is approximately 33.57%. Let's compare this to the given options:

- 1. 24%
- 2. 32%
- 3. 26%
- 4. 33.5%

Our calculated value of 33.57% is closest to 33.5%.

Therefore, based on this interpretation, the average price increase of the commodity from 1995 to 1998 is 33.5%.

142. Answer: a

Explanation:

The correct answer is **option 1**.

Given: ABCD is a square and DEC is an equilateral triangle. Points A and E are joined by a straight line.

Calculation:

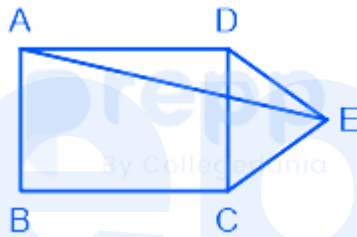
$\Rightarrow$ ABCD is a square, then $\angle ADC = 90^\circ$

$AB=BC=CD=DA$

$\Rightarrow$ DCE is an equilateral triangle, then $\angle EDC = 60^\circ$

$DC=DC=CE$

$\Rightarrow$ Hence, $AB=BC=CD=DA=CE=DC$



$\Rightarrow$ Now, In $\triangle ADE$,

$AD=DE$

$\Rightarrow$ If two sides are equal, then the two angles opposite to the equal sides will also be equal.

$\Rightarrow$ Thus, $\angle AED=\angle DAE=x^\circ$

$\angle ADE=\angle ADC+\angle EDC$

$\angle ADE=90^\circ+60^\circ$

$\angle ADE=150^\circ$

Sum of angles of triangle ADE = 180

$\angle ADE+\angle AED+\angle DAE=180$

$150+x+x=180$

$$\Rightarrow x=15^\circ$$

Hence, $\angle DAE=15^\circ$

143. Answer: b

Explanation:

Evaluating the Limit: $\lim_{x \rightarrow 0} \frac{xe^x - \log(1+x)}{x^2}$

This question asks us to calculate the value of a limit expression involving the variable x approaching 0. The expression is:

$$\lim_{x \rightarrow 0} \frac{xe^x - \log(1+x)}{x^2}$$

Identifying the Indeterminate Form

Before applying any rules, we substitute $x = 0$ into the expression to check the form:

- **Numerator Value at $x = 0$:** $0 \cdot e^0 - \log(1+0) = 0 \cdot 1 - \log(1) = 0 - 0 = 0$.
- **Denominator Value at $x = 0$:** $0^2 = 0$.

Since the substitution results in the form $\frac{0}{0}$, we have an indeterminate form. This indicates that we can use L'Hôpital's Rule or Taylor series expansions to find the limit.

Method 1: Using L'Hôpital's Rule

L'Hôpital's Rule is a useful technique for evaluating limits of indeterminate forms. It states that if $\lim_{x \rightarrow c} \frac{f(x)}{g(x)}$ yields $\frac{0}{0}$ or $\frac{\infty}{\infty}$, then the limit is equal to $\lim_{x \rightarrow c} \frac{f'(x)}{g'(x)}$, provided the latter limit exists. We will apply this rule iteratively.

First Application of L'Hôpital's Rule

Let $f(x) = xe^x - \log(1+x)$ and $g(x) = x^2$. We compute their derivatives:

- Derivative of the numerator: $f'(x) = \frac{d}{dx}(xe^x) - \frac{d}{dx}(\log(1+x))$ Using the product rule for xe^x : $\frac{d}{dx}(xe^x) = (1)e^x + x(e^x) = e^x(1+x)$. The derivative of $\log(1+x)$ is $\frac{1}{1+x}$. Therefore, $f'(x) = e^x(1+x) - \frac{1}{1+x}$.
- Derivative of the denominator: $g'(x) = \frac{d}{dx}(x^2) = 2x$.

The limit expression now becomes:

$$\lim_{x \rightarrow 0} \frac{e^x(1+x) - \frac{1}{1+x}}{2x}$$

Substitute $x = 0$ into this new expression:

- Numerator: $e^0(1+0) - \frac{1}{1+0} = 1(1) - 1 = 0$.
- Denominator: $2(0) = 0$.

We still have the $\frac{0}{0}$ indeterminate form. We must apply L'Hôpital's Rule again.

Second Application of L'Hôpital's Rule

We compute the second derivatives:

- Second derivative of the numerator: $f''(x) = \frac{d}{dx}(e^x(1+x) - \frac{1}{1+x})$ $f''(x) = \frac{d}{dx}(e^x(1+x)) - \frac{d}{dx}((1+x)^{-1})$ $f''(x) = [e^x(1+x) + e^x(1)] - [-1(1+x)^{-2}(1)]$ $f''(x) = e^x(x+2) + \frac{1}{(1+x)^2}$.
- Second derivative of the denominator: $g''(x) = \frac{d}{dx}(2x) = 2$.

The limit expression is now:

$$\lim_{x \rightarrow 0} \frac{e^x(x+2) + \frac{1}{(1+x)^2}}{2}$$

Now, substitute $x = 0$ into this final expression:

$$\frac{e^0(0+2) + \frac{1}{(1+0)^2}}{2} = \frac{1(2) + 1}{2} = \frac{2+1}{2} = \frac{3}{2}$$

This limit exists and equals $\frac{3}{2}$.

Method 2: Using Taylor Series Expansion

An alternative approach is to use the known Taylor series expansions for e^x and $\log(1+x)$ around $x = 0$.

The Taylor series for e^x is:

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + O(x^4)$$

The Taylor series for $\log(1+x)$ is:

$$\log(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} + O(x^4)$$

Substituting Series into the Numerator

First, calculate the series for xe^x :

$$xe^x = x \left(1 + x + \frac{x^2}{2} + O(x^3) \right) = x + x^2 + \frac{x^3}{2} + O(x^4)$$

Now substitute the series into the numerator $xe^x - \log(1+x)$:

$$(xe^x) - \log(1+x) = \left(x + x^2 + \frac{x^3}{2} + O(x^4) \right) - \left(x - \frac{x^2}{2} + \frac{x^3}{3} + O(x^4) \right)$$

Combine terms:

$$= (x - x) + \left(x^2 - \left(-\frac{x^2}{2} \right) \right) + \left(\frac{x^3}{2} - \frac{x^3}{3} \right) + O(x^4)$$

$$= 0 + \left(x^2 + \frac{1}{2}x^2 \right) + \left(\frac{3}{6}x^3 - \frac{2}{6}x^3 \right) + O(x^4)$$

$$= \frac{3}{2}x^2 + \frac{1}{6}x^3 + O(x^4)$$

Evaluating the Limit using the Series

Now substitute this back into the original limit expression:

$$\lim_{x \rightarrow 0} \frac{\frac{3}{2}x^2 + \frac{1}{6}x^3 + O(x^4)}{x^2}$$

Divide each term in the numerator by x^2 :

$$\lim_{x \rightarrow 0} \left(\frac{\frac{3}{2}x^2}{x^2} + \frac{\frac{1}{6}x^3}{x^2} + \frac{O(x^4)}{x^2} \right)$$

$$= \lim_{x \rightarrow 0} \left(\frac{3}{2} + \frac{1}{6}x + O(x^2) \right)$$

As $x \rightarrow 0$, the terms $\frac{1}{6}x$ and $O(x^2)$ approach 0.

$$= \frac{3}{2} + 0 + 0 = \frac{3}{2}$$

Final Result

Both methods demonstrate that the limit evaluates to $\frac{3}{2}$.

The options provided were:

- $\frac{1}{2}$
- $\frac{3}{2}$
- 0
- $\frac{5}{2}$

The calculated value matches one of the options.

144. Answer: c

Explanation:

Investigating the Series $\sum \frac{n^2-1}{n^2+1}x^2$ for Convergence

This explanation delves into the convergence properties of the infinite series $\sum \frac{n^2-1}{n^2+1}x^2$, given the condition $x > 0$. We will determine if the series converges or diverges, paying close attention to the specific case where $x \geq 1$. Understanding the behavior of the series terms is key.

Analyzing the General Term of the Series

Let the general term of the series be represented by a_n .

$$a_n = \frac{n^2 - 1}{n^2 + 1}x^2$$

To analyze the convergence or divergence of the series $\sum a_n$, a common first step is to examine the limit of its general term, a_n , as n approaches infinity ($n \rightarrow \infty$). This is often called the Test for Divergence or the Term Test.

Let's calculate this limit:

$$\lim_{n \rightarrow \infty} a_n = \lim_{n \rightarrow \infty} \left(\frac{n^2 - 1}{n^2 + 1} x^2 \right)$$

We can factor n^2 from both the numerator and the denominator within the limit expression. Since x^2 is a constant factor with respect to n , we can take it outside the limit:

$$= x^2 \lim_{n \rightarrow \infty} \left(\frac{n^2 \left(1 - \frac{1}{n^2}\right)}{n^2 \left(1 + \frac{1}{n^2}\right)} \right)$$

Canceling out the n^2 terms gives:

$$= x^2 \lim_{n \rightarrow \infty} \left(\frac{1 - \frac{1}{n^2}}{1 + \frac{1}{n^2}} \right)$$

As n becomes infinitely large ($n \rightarrow \infty$), the fraction $\frac{1}{n^2}$ approaches 0. Substituting this value:

$$\begin{aligned} &= x^2 \left(\frac{1 - 0}{1 + 0} \right) \\ &= x^2 \left(\frac{1}{1} \right) \\ &= x^2 \end{aligned}$$

So, the limit of the general term a_n as $n \rightarrow \infty$ is x^2 .

$$\lim_{n \rightarrow \infty} a_n = x^2$$

Applying the Term Test for Divergence

The **Term Test for Divergence** is a crucial test in series analysis. It states that for a series $\sum a_n$ to converge, it is necessary that the limit of its terms approaches zero, i.e., $\lim_{n \rightarrow \infty} a_n = 0$. If this condition is not met, meaning $\lim_{n \rightarrow \infty} a_n \neq 0$, then the series must diverge.

In this specific series, we found that $\lim_{n \rightarrow \infty} a_n = x^2$. The question states that $x > 0$. This means x^2 will always be a positive number.

Therefore, for any $x > 0$, the limit x^2 is never equal to 0.

Evaluating the Condition $x \geq 1$

The options provided relate to the condition $x \geq 1$. Let's examine our result in this context.

If $x \geq 1$, since x is positive, squaring both sides preserves the inequality:

$$x^2 \geq 1^2$$

$$x^2 \geq 1$$

This means that when $x \geq 1$, the limit of the terms, x^2 , is always greater than or equal to 1.

Since $x^2 \geq 1$ for $x \geq 1$, the limit $\lim_{n \rightarrow \infty} a_n$ is definitely not zero.

Conclusion on Series Divergence

Based on the Term Test for Divergence, because $\lim_{n \rightarrow \infty} \frac{n^2-1}{n^2+1} x^2 = x^2$, and $x^2 \neq 0$ for all $x > 0$, the series $\sum \frac{n^2-1}{n^2+1} x^2$ diverges.

Specifically, considering the condition $x \geq 1$, we found that the limit of the terms is $x^2 \geq 1$. This confirms that the terms do not approach zero, and therefore, the series diverges for $x \geq 1$.

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145. Answer: a

Explanation:

Detailed Explanation of the Correct Statement Regarding x and x^2

This solution aims to identify the correct mathematical statement among the given options concerning the relationship between a number x and its square x^2 . We will analyze each statement step-by-step.

Analysis of Statements

Statement 1: If $x < 0$, then $x^2 > x$

- Consider the condition $x < 0$. This means x is a negative number.
- Let's look at the square of x , which is x^2 . Since the square of any non-zero real number is positive, x^2 will always be positive when $x < 0$.
- Compare x^2 and x . We have a positive number (x^2) and a negative number (x). Any positive number is always greater than any negative number.
- Therefore, $x^2 > x$ holds true for all $x < 0$.
- Example: If $x = -5$, then $x^2 = (-5)^2 = 25$. Clearly, $25 > -5$.
- This statement appears to be correct.

Statement 2: If $x^2 > 0$, then $x > 0$

- The condition $x^2 > 0$ means that x^2 is positive.
- This is true for any real number x except $x = 0$. So, x can be positive ($x > 0$) or negative ($x < 0$).
- The statement concludes that x must be positive ($x > 0$).
- Counterexample: If $x = -2$, then $x^2 = (-2)^2 = 4$. Here, $x^2 > 0$ is true ($4 > 0$). However, $x > 0$ is false (-2 is not greater than 0).
- Therefore, this statement is incorrect.

Statement 3: If $x^2 > x$, then $x < 0$

- Let's analyze the inequality $x^2 > x$.
- Rewrite the inequality: $x^2 - x > 0$.
- Factor out x : $x(x - 1) > 0$.
- This inequality holds true when both factors x and $(x - 1)$ have the same sign:
 - Case 1: Both positive. $x > 0$ AND $x - 1 > 0$ (which means $x > 1$). Combining these, we get $x > 1$.
 - Case 2: Both negative. $x < 0$ AND $x - 1 < 0$ (which means $x < 0$). Combining these, we get $x < 0$.
- So, $x^2 > x$ is true if $x < 0$ or $x > 1$.
- The statement says that if $x^2 > x$, then x must be less than 0 .

- Counterexample: If $x = 2$, then $x^2 = 4$. $x^2 > x$ is true ($4 > 2$). However, $x < 0$ is false (2 is not less than 0).
- Therefore, this statement is incorrect.

Statement 4: If $x^2 > x$, then $x > 0$

- As analyzed in Statement 3, $x^2 > x$ is true if $x < 0$ or $x > 1$.
- The statement says that if $x^2 > x$, then x must be greater than 0.
- Counterexample: If $x = -3$, then $x^2 = 9$. $x^2 > x$ is true ($9 > -3$). However, $x > 0$ is false (-3 is not greater than 0).
- Therefore, this statement is incorrect.

Conclusion

Based on the analysis, only the first statement correctly describes the relationship between x and x^2 under the given condition.

The correct statement is: If $x < 0$, then $x^2 > x$.

146. Answer: d

Explanation:

Calculating Average Speed for the Journey

This problem asks us to find the **average speed** of a car over a complete round trip. The trip consists of two parts: traveling from a plane area to a hill station and then returning. It's important to understand that average speed is calculated as Total Distance divided by Total Time.

Trip Details: Distance and Speed

Let's break down the information given:

- The distance (d) between the plane area and the hill station is 200 km.

- The average speed (v_1) during the trip **to** the hill station is 40 km/h.
- The average speed (v_2) during the **return** trip is 20 km/h.

The journey involves covering the same distance twice, once in each direction. The question mentions "entire distance of 40 km", but based on the context and options, it refers to the total round trip distance.

Time Calculation for Each Leg

We need to calculate the time taken for each part of the journey. The formula relating time, distance, and speed is: Time = Distance / Speed.

1. Time to reach the hill station (t_1):

Using the formula $t_1 = \frac{\text{Distance}}{\text{Speed}_1} = \frac{d}{v_1}$, we get:

$$t_1 = \frac{200 \text{ km}}{40 \text{ km/h}} = 5 \text{ hours}$$

2. Time for the return trip (t_2):

Using the formula $t_2 = \frac{\text{Distance}}{\text{Speed}_2} = \frac{d}{v_2}$, we get:

$$t_2 = \frac{200 \text{ km}}{20 \text{ km/h}} = 10 \text{ hours}$$

Total Distance and Total Time Calculation

Now, let's find the total distance covered and the total time spent for the entire journey.

Total Distance (D):

The car travels 200 km to the hill station and 200 km back.

$$D = \text{Distance}_{\text{outbound}} + \text{Distance}_{\text{return}} = d + d = 200 \text{ km} + 200 \text{ km} = 400 \text{ km}$$

Total Time (T):

The total time is the sum of the time taken for both legs of the journey.

$$T = t_1 + t_2 = 5 \text{ hours} + 10 \text{ hours} = 15 \text{ hours}$$

Determining the Overall Average Speed

The average speed for the entire trip is calculated using the formula:

$$V_{avg} = \frac{\text{Total Distance}}{\text{Total Time}} = \frac{D}{T}$$

Substituting the total distance and total time we found:

$$V_{avg} = \frac{400 \text{ km}}{15 \text{ hours}}$$

Simplifying the result:

$$V_{avg} = \frac{400}{15} \text{ km/h}$$

To get a more common representation, we can simplify the fraction or convert it to a decimal:

$$V_{avg} = \frac{80}{3} \text{ km/h} \approx 26.67 \text{ km/h}$$

Journey Summary

Here's a summary of the calculations:

Segment	Distance (km)	Speed (km/h)	Time (h)
Plane to Hill Station	200	40	5
Hill Station to Plane	200	20	10
Total Journey	400	-	15

The calculation shows that the average speed for the entire journey is approximately 26.67 km/h.

147. Answer: a

Explanation:

Solving Function Problems: Finding $f(7)$ Given $f(-7)$

The problem asks us to find the value of $f(7)$ for the function $f(x) = ax^7 + bx^3 + cx - 5$, given that a , b , and c are constants and $f(-7) = 7$.

The function $f(x)$ can be broken down into two parts: terms with odd powers of x and a constant term.

- The terms ax^7 , bx^3 , and cx involve odd powers of x . Let $g(x) = ax^7 + bx^3 + cx$.
- The term -5 is a constant. Let $h(x) = -5$.

So, $f(x) = g(x) + h(x)$.

Properties of Odd and Constant Functions

Let's examine the properties of $g(x)$ and $h(x)$ when x is replaced by $-x$:

- For $g(x) = ax^7 + bx^3 + cx$: $g(-x) = a(-x)^7 + b(-x)^3 + c(-x)$ Since $(-x)^n = -x^n$ for odd n , we have: $g(-x) = a(-x^7) + b(-x^3) + c(-x)$ $g(-x) = -ax^7 - bx^3 - cx$ $g(-x) = -(ax^7 + bx^3 + cx)$ $g(-x) = -g(x)$ This shows that $g(x)$ is an **odd function**.
- For $h(x) = -5$: $h(-x) = -5$ $h(-x) = h(x)$ This shows that $h(x)$ is a **constant function** (which is also considered an **even function**).

Using Function Properties to Solve for $f(7)$

Now let's write $f(-x)$ in terms of $g(x)$ and $h(x)$:

$$f(-x) = g(-x) + h(-x) \text{ Using the properties we found: } f(-x) = -g(x) + h(x)$$

We also know that $f(x) = g(x) + h(x)$. Let's add $f(x)$ and $f(-x)$:

$$\begin{aligned} f(x) + f(-x) &= (g(x) + h(x)) + (-g(x) + h(x)) \\ f(x) + f(-x) &= g(x) + h(x) - g(x) + h(x) \\ f(x) + f(-x) &= 2h(x) \end{aligned}$$

Since $h(x) = -5$, the sum $f(x) + f(-x)$ is a constant value:

$$f(x) + f(-x) = 2(-5) \quad f(x) + f(-x) = -10$$

This equation holds true for any value of x . We are given information about $f(-7)$ and asked to find $f(7)$. Let's substitute $x = 7$ into this equation:

$$f(7) + f(-7) = -10$$

We are given that $f(-7) = 7$. Substitute this value into the equation:

$$f(7) + 7 = -10$$

Now, solve for $f(7)$:

$$f(7) = -10 - 7 \quad f(7) = -17$$

So, the value of $f(7)$ is -17 .

Step-by-Step Solution Summary

1. Identify the function $f(x) = ax^7 + bx^3 + cx - 5$.
2. Separate the function into its odd part $g(x) = ax^7 + bx^3 + cx$ and its constant part $h(x) = -5$.
3. Use the property of odd functions $g(-x) = -g(x)$ and constant functions $h(-x) = h(x)$.
4. Derive the relationship $f(x) + f(-x) = 2h(x)$.
5. Substitute $h(x) = -5$ to get $f(x) + f(-x) = -10$.
6. Substitute $x = 7$ into the relationship: $f(7) + f(-7) = -10$.
7. Substitute the given value $f(-7) = 7$: $f(7) + 7 = -10$.
8. Solve for $f(7)$: $f(7) = -10 - 7 = -17$.

Given Information	Function Properties Used	Result
$f(x) = ax^7 + bx^3 + cx - 5$	Odd part $g(x) = ax^7 + bx^3 + cx$ ($g(-x) = -g(x)$)	$f(x) = g(x) + h(x)$
$f(-7) = 7$	Constant part $h(x) = -5$ ($h(-x) = h(x)$)	$f(-x) = -g(x) + h(x)$
Find $f(7)$	$f(x) + f(-x) = 2h(x) = 2(-5) = -10$	$f(7) + f(-7) = -10$
	Substitute $f(-7) = 7$	$f(7) + 7 = -10$
	Solve for $f(7)$	$f(7) = -17$

Revision Table: Key Concepts for Function Problems

Concept	Description	Example/Property
Odd Function	A function $g(x)$ where $g(-x) = -g(x)$. Typically involves only odd powers of x .	$g(x) = x^3 - x$; $g(-x) = (-x)^3 - (-x) = -x^3 + x = -(x^3 - x) = -g(x)$
Even Function	A function $h(x)$ where $h(-x) = h(x)$. Typically involves only even powers of x and constants.	$h(x) = x^4 + x^2 + 5$; $h(-x) = (-x)^4 + (-x)^2 + 5 = x^4 + x^2 + 5 = h(x)$
Constant Function	A function $k(x) = C$, where C is a constant. This is a type of even function.	$k(x) = -5$; $k(-x) = -5 = k(x)$
Function Decomposition	Any function can be written as the sum of an even function and an odd function: $f(x) = E(x) + O(x)$.	$f(x) = \frac{f(x)+f(-x)}{2} + \frac{f(x)-f(-x)}{2}$, where $E(x) = \frac{f(x)+f(-x)}{2}$ is even and $O(x) = \frac{f(x)-f(-x)}{2}$ is odd. In our case, $E(x) = h(x)$ and $O(x) = g(x)$.

Additional Information: Applying Odd/Even Properties

The property $f(x) + f(-x) = 2h(x)$ derived above is very useful when a function is composed of an odd part and a constant part. If $f(x) = O(x) + C$, where $O(x)$ is an odd function and C is a constant, then:

- $f(-x) = O(-x) + C = -O(x) + C$.
- $f(x) + f(-x) = (O(x) + C) + (-O(x) + C) = 2C$.

This means that for any such function, the sum of its value at x and its value at $-x$ is twice the constant term, regardless of the odd part. This property simplifies finding $f(7)$ when $f(-7)$ is known and the function structure fits this pattern.

In this specific problem, $f(x) = ax^7 + bx^3 + cx - 5$. The odd part is $ax^7 + bx^3 + cx$ and the constant part is -5 . The sum $f(x) + f(-x)$ must equal $2 \times (-5) = -10$ for all x . Setting $x = 7$ gives $f(7) + f(-7) = -10$. Using the given $f(-7) = 7$, we easily find $f(7) = -17$. This approach avoids needing to know the values of a, b, c .

148. Answer: d

Explanation:

Analyzing the Function $f(x) = \frac{x-|x|}{x}$

To determine the continuity of the function $f(x) = \frac{x-|x|}{x}$, we first need to understand the behavior of the absolute value function, $|x|$.

The absolute value function $|x|$ is defined as:

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

Now, let's analyze the function $f(x)$ in different intervals based on the definition of $|x|$:

Case 1: $x > 0$

When x is positive ($x > 0$), $|x| = x$. Substituting this into the function definition:

$$f(x) = \frac{x-x}{x} = \frac{0}{x} = 0$$

So, for all $x > 0$, $f(x) = 0$.

Case 2: $x < 0$

When x is negative ($x < 0$), $|x| = -x$. Substituting this into the function definition:

$$f(x) = \frac{x-(-x)}{x} = \frac{x+x}{x} = \frac{2x}{x} = 2$$

So, for all $x < 0$, $f(x) = 2$.

Case 3: $x = 0$

At $x = 0$, the denominator of the function $f(x)$ becomes zero ($x = 0$). Division by zero is undefined.

Therefore, the function $f(x)$ is not defined at $x = 0$.

Evaluating Continuity

A function is continuous at a point c if three conditions are met: $f(c)$ is defined, the limit $\lim_{x \rightarrow c} f(x)$ exists, and $\lim_{x \rightarrow c} f(x) = f(c)$.

Continuity for $x \neq 0$

For $x > 0$: The function is $f(x) = 0$. This is a constant function, which is continuous everywhere it is defined. Thus, $f(x)$ is continuous for all $x > 0$.

For $x < 0$: The function is $f(x) = 2$. This is also a constant function, which is continuous everywhere it is defined. Thus, $f(x)$ is continuous for all $x < 0$.

Continuity at $x = 0$

As established earlier, the function $f(x)$ is undefined at $x = 0$. Since the first condition for continuity (the function must be defined at the point) is not met, the function $f(x)$ is not continuous at $x = 0$.

Conclusion on Function Continuity

Combining the analysis:

- The function $f(x)$ is equal to 0 for all $x > 0$.
- The function $f(x)$ is equal to 2 for all $x < 0$.
- The function $f(x)$ is undefined at $x = 0$.

Therefore, the function $f(x)$ is continuous for all values of x except at $x = 0$.

Assessing the Options

1. **The function is continuous everywhere:** This is incorrect because the function is not continuous at $x = 0$.
2. **The function is not continuous:** This statement is true but incomplete, as the function is continuous for $x \neq 0$.
3. **The function is continuous when $x < 0$:** This is true, but it doesn't describe the function's continuity for $x > 0$.
4. **The function is continuous for all x except zero:** This accurately describes the function's continuity across its domain.

The most accurate description of the function's continuity is that it is continuous for all x except at the point $x = 0$.

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149. Answer: b

Explanation:

Finding Asymptotes Parallel to Coordinate Axes for the Curve

We are asked to find the asymptotes parallel to the coordinate axes for the given curve defined by the equation:

$$x^2y^2 = a^2(x^2 + y^2)$$

To find asymptotes parallel to the axes, we examine the behavior of the curve as the coordinates approach infinity or when the denominator of the expression for one variable approaches zero.

Asymptotes Parallel to the x-axis

Asymptotes parallel to the x-axis occur when y approaches $\pm\infty$. We can find these by looking at the equation rearranged to express x in terms of y or vice versa, focusing on the highest powers. A common method is to find the values of x for which y tends to infinity.

Let's rearrange the equation to solve for y^2 :

$$x^2y^2 = a^2x^2 + a^2y^2$$

Group terms involving y^2 :

$$x^2y^2 - a^2y^2 = a^2x^2$$

Factor out y^2 :

$$y^2(x^2 - a^2) = a^2x^2$$

Now, isolate y^2 :

$$y^2 = \frac{a^2x^2}{x^2 - a^2}$$

For y to approach infinity ($\pm\infty$), the denominator must approach zero while the numerator is non-zero. This occurs when:

$$x^2 - a^2 = 0$$

Solving for x :

$$x^2 = a^2$$

This gives us $x = \pm a$.

Therefore, the asymptotes parallel to the x-axis are $x = a$ and $x = -a$.

Asymptotes Parallel to the y-axis

Similarly, asymptotes parallel to the y-axis occur when x approaches $\pm\infty$. We rearrange the equation to solve for x^2 :

Start with the original equation:

$$x^2y^2 = a^2x^2 + a^2y^2$$

Group terms involving x^2 :

$$x^2y^2 - a^2x^2 = a^2y^2$$

Factor out x^2 :

$$x^2(y^2 - a^2) = a^2y^2$$

Now, isolate x^2 :

$$x^2 = \frac{a^2y^2}{y^2 - a^2}$$

For x to approach infinity ($\pm\infty$), the denominator must approach zero while the numerator is non-zero. This occurs when:

$$y^2 - a^2 = 0$$

Solving for y :

$$y^2 = a^2$$

This gives us $y = \pm a$.

Therefore, the asymptotes parallel to the y-axis are $y = a$ and $y = -a$.

Summary of Asymptotes

Combining the results, the asymptotes parallel to the coordinate axes for the curve $x^2y^2 = a^2(x^2 + y^2)$ are:

- Parallel to x-axis: $x = \pm a$
- Parallel to y-axis: $y = \pm a$

Thus, the asymptotes are $x = \pm a$ and $y = \pm a$.

Comparing with Options

Let's compare our findings with the given options:

- Option 1: $x = \pm a, y = 0$ - Incorrect.
- Option 2: $x = \pm a, y = \pm a$ - Matches our result.
- Option 3: $x = a, y = 0$ - Incorrect.
- Option 4: $x = -a, y = -a$ - Incorrect.

150. Answer: d

Explanation:

To understand the nature of the point $x = 0$ for the given curve $f(x) = x^3$, we need to analyze its characteristics using calculus, specifically its derivatives.

Understanding the Function $f(x) = x^3$

The function we are examining is $f(x) = x^3$. We need to determine if the point $x = 0$ represents a global minimum, a local minimum, an extreme point, or a point of inflexion.

Analyzing Extreme Points using the First Derivative

Extreme points (local minima or maxima) occur at critical points where the first derivative is zero or undefined. Let's find the first derivative of $f(x) = x^3$:

$$f'(x) = \frac{d}{dx}(x^3)$$

Using the power rule for differentiation, we get:

$$f'(x) = 3x^2$$

To find critical points, we set the first derivative equal to zero:

$$3x^2 = 0$$

Solving this equation gives:

$$x = 0$$

So, $x = 0$ is a critical point. Now, we need to determine if it's a minimum, maximum, or neither. We can use the First Derivative Test.

First Derivative Test Application

We examine the sign of $f'(x)$ on either side of $x = 0$:

- **Left of $x = 0$:** Let's choose a value like $x = -1$.

$$f'(-1) = 3(-1)^2 = 3(1) = 3$$

Since $f'(-1) > 0$, the function is increasing as it approaches $x = 0$ from the left.

- **Right of $x = 0$:** Let's choose a value like $x = 1$.

$$f'(1) = 3(1)^2 = 3(1) = 3$$

Since $f'(1) > 0$, the function is also increasing as it moves away from $x = 0$ to the right.

Because the sign of $f'(x)$ does not change at $x = 0$ (it's positive on both sides), the point $x = 0$ is neither a local minimum nor a local maximum. Thus, it's not an extreme point.

Furthermore, the function $f(x) = x^3$ extends from negative infinity to positive infinity, meaning it does not have a lowest or highest value. Therefore, $x = 0$ cannot be a global minimum point or a global maximum point.

Identifying Points of Inflexion using the Second Derivative

A **point of inflexion** occurs where the curve changes its concavity (from concave up to concave down, or vice versa). This often happens where the second derivative is zero or undefined, and it must change sign at that point.

Let's calculate the second derivative of $f(x) = x^3$:

$$f''(x) = \frac{d}{dx}(f'(x)) = \frac{d}{dx}(3x^2)$$

Applying the power rule again:

$$f''(x) = 6x$$

Now, we set the second derivative equal to zero to find potential points of inflexion:

$$6x = 0$$

This gives us:

$$x = 0$$

Second Derivative Test Application

We need to check if the sign of $f''(x)$ changes at $x = 0$:

- **Left of $x = 0$:** Using $x = -1$.

$$f''(-1) = 6(-1) = -6$$

Since $f''(-1) < 0$, the curve is concave down for $x < 0$.

- **Right of $x = 0$:** Using $x = 1$.

$$f''(1) = 6(1) = 6$$

Since $f''(1) > 0$, the curve is concave up for $x > 0$.

As the sign of the second derivative $f''(x)$ changes from negative to positive at $x = 0$, the concavity of the curve changes at this point. This confirms that $x = 0$ is a **point of inflexion** for the curve $f(x) = x^3$.

Summary of Findings

For the curve $f(x) = x^3$ at the point $x = 0$:

- It is not a **local minimum point** because the first derivative ($f'(x)$) does not change from negative to positive.
- It is not a **global minimum point** because the function does not have an absolute lowest value.
- It is not an **extreme point** (local minimum or maximum) because the first derivative does not change sign.
- It is a **point of inflexion** because the second derivative ($f''(x)$) changes sign at $x = 0$, indicating a change in concavity from down to up.

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