STAFF SELECTION COMMISSION

SUB-INSPECTOR IN DELHI POLICE AND CENTRAL ARMED POLICE FORCES EXAMINATION (PAPER-I)

SOLVED PAPER

(23rd November 2020: Shift-1)

Time Allotted- 2 hours **Max marks-** 200

General Intelligence and Reasoning

1. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

?	8	11
7	6	5
48	63	72

1. 7 **2.** 4 **3.** 5 **4.** 6

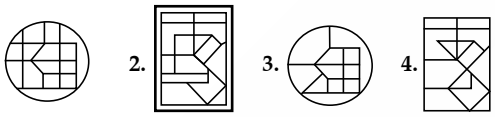
2. Select the option that represents the correct orde of the given words as they would appear in an English dictionary.

1. Flexible **2.** Flower **3.** Flooring **4.** Flood **5.** Floater

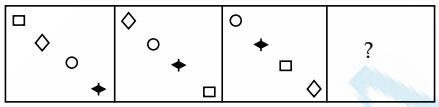
1. 3, 5, 4, 2, 1 **2.** 1, 5, 4, 3, 2 **3.** 2, 5, 4, 3, 1 **4.** 1, 5, 3, 4, 2

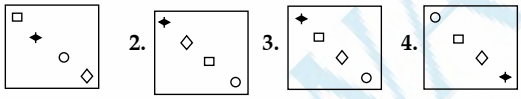
3. Select the option in which the given figure (X) is embedded (rotation is NOT allowed).

(X)



4. Select the figure that will replace the question mark (?) in the following figure series.





5. Select the letter-cluster that can replace the question mark (?) in the given letter-cluster series.

AE, KQ, EI, LR, IO, ?, OU, NT

1. NR **2.** NS **3.** MS **4.** MR

6. Select the correct option that indicates the arrangement of the following words in a logical and meaningful order.

1. Scrutiny **2.** Applications **3.** Interview **4.** Job offer **5.** Joining

1. 2, 1, 3, 4, 5 **2.** 3, 1, 5, 4, 2 **3.** 2, 4, 1, 5, 3 **4.** 1, 3, 2, 4, 5

7. Which two signs should be interchanged to make the given equation correct?

25 – 5 × 50 + 10 + 35 = 155

1. + and – **2.** × and ÷ **3.** × and + **4.** × and –

8. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

SLOW : MPTX :: CAUGHT:?

1. BDHIUV **2.** BDIUVH **3.** DBVHIU **4.** WVHIUV

9. Select the ltter-cluster that can replace the question mark (?) in the given letter-cluster series.

HBS, GDP, FFM, ?, DJG

1. DHJ **2.** EHG **3.** EGI **4.** EHJ

10. One day, 90 students were travelling in a bus and the ratio of the number of boys to that of grls was 2 : 1. The next day, the number of students remained the same, but the ratio of the number of boys to that of girls became 3 : 2. What was the difference between the numbers of boys travelling in the bus on both the days?

1. 6 **2.** 18 **3.** 14 **4.** 30

11. If 8 October 2006 was Wednesday, then what was the day of the week on 17 October 2000?

1. Sunday **2.** Tuesday **3.** Wednesday **4.** Monday

12. Which number will repalce the question mark (?) in the following series?

82, ?, 119, 142, 168, 197

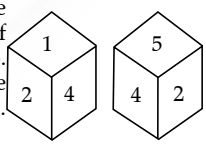
1. 107 **2.** 85 **3.** 95 **4.** 99

13. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

54	40	56
68	57	44
47	39	?

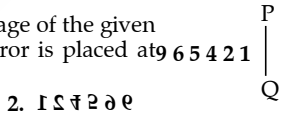
1. 39 **2.** 22 **3.** 30 **4.** 32

14. Two different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the face showing '5'.



1. 4 **2.** 3 **3.** 6 **4.** 1

15. Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown below.

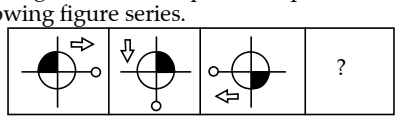


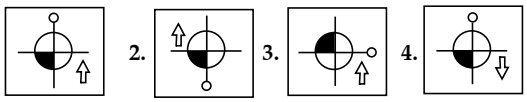
1. ١٢٤٥٥٩ **2.** ١٢٤٢٥٩ **3.** ١٢٧٥٩٩ **4.** ١٢٤٥٥٩

16. Two teams, consisting of 3 players in each team, are participating n a debate competition. Three players in one team are sitting facing the three players of the other team. K and L are sitting faicng each other. N and O are in different teams. M is sitting facing N. P is at one of the corners. N is sitting to the immediate right of L. Which of the following are members of the same team?

1. N, L and M **2.** O, K and N **3.** K, M and P **4.** L, N and P

17. Select the figure that will replace the question mark (?) in the following figure series.

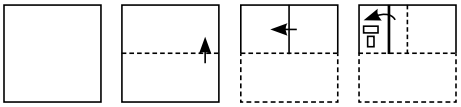


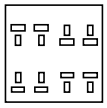
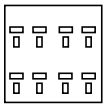
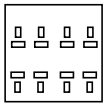
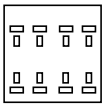


18. In a code language, If '265' is written as 'PNH', '187' is written as 'OXB', and '248' is written as 'NUB', then which of the following letters represents the number '4'?
1. U **2.** B **3.** N **4.** P

19. If 'A' denotes 'addition', 'B' denotes 'multiplication', 'C' denotes 'subtraction', and 'D' denotes 'division', then what will be the value of the following expression?
35 B 2 A 5 B (40 C 37) A (8 B 4) D 16 C 14 = ?
1. 73 **2.** 54 **3.** 66 **4.** 56

20. A paper is folded and cut as shown below. How will it appear when unfolded?

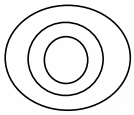


1.  **2.**  **3.**  **4.** 

21. Four friends are playing carrom and sitting on the four sides of the catrom board. B is to the right of C, D is the left of A. Who is sitting to the left of C?
1. B **2.** Data is inadequate
3. D **4.** A

22. Ronita's only brother Vikram is the husband of Kritika's mother Sejal. How is Ronita's mother Chandni related to Kritika?
1. Paternal aunt **2.** Mother-in-law
3. Paternal grandmother **4.** Maternal grandmother

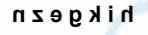
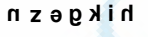
23. The given Venn diagram best represents the relationship between which set of classes given in the options?
1. Males, Fathers, Sons
2. Engineers, Brothers, Males
3. Fathers, Males, Doctors
4. Sisters, Females, Mothers



24. Select the letter-cluster that can replace the question mark (?) in the given letter-cluster series.
XMT, ENA, LOH, SPO, ?
1. YPC **2.** YQU **3.** ZQV **4.** ZQZ

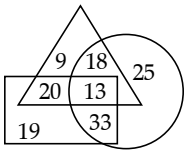
25. Two numbers are named as Number A and Number B. The sum of Number A, its square and its cube is 399. The sum of Number B, its square and its cube is 819. What would be the square of the number obtained by adding Number A and Number B?
1. 289 **2.** 324 **3.** 225 **4.** 256

26. Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown below.

1.  **2.** 
3.  **4.** 

27. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements
All photographs are newspapers.
Some photographs are computers.
Conclusions:
I. Some computers are photographs.
II. Some computers are newspapers.
III. Some newspapers are photographs.
1. Only conclusions I and III follow
2. All of the conclusions follow
3. Only conclusions I and II follow
4. Only conclusions II and III follow

28. In the following Venn diagrams, the 'Circle' stands for 'Journalists', the 'Triangle' stands for 'Females' and the 'Rectangle' stands for 'Urban residents'. The given numbers represent the number of persons in that particular category. How many journalists are females but NOT urban residents?

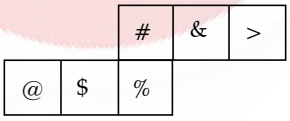


1. 13 **2.** 18 **3.** 9 **4.** 25

29. Two statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements
No plant is a tree
All ornaments are plants.
Conclusions:
I. No ornament is a tree.
II. Some plants are ornaments.
1. Either conclusion I or II follows
2. Both conclusions follow
3. Only conclusion II follows
4. Only conclusion I follows

30. Five friends P, Q, R, S and T are sitting around a circular table facing the centre of the table. S is sitting to the immediate right of P. T is sitting to the immediate left of Q. P is between S and R. Who is sitting at the second place to the left of T?
1. R **2.** Q **3.** P **4.** S

31. A cube is made by folding the given sheet. In the cube so formed, which of the following pairs of symbols will NOT be on the opposite faces?



1. & and $ **2.** @ and % **3.** $ and # **4.** # and >

32. Select the option that is related to the third letter-cluster in the same way as the second lette-cluster is related to the first letter-cluster.
ABSORPTION; ROSBANOITP :: VISUALIZER:?
1. UASIVERZIL **2.** AUSIVREILZ
3. AUSIVREZIL **4.** VUAISREZIL

33. Which number will replace the question mark (?) in the following series?
2430, ?, 270, 90, 30, 10
1. 810 **2.** 800 **3.** 540 **4.** 805

34. Select the correct combination of mathematical signs that can sequentially replace the * signs from left to right to balance the following equation.
31 * 2 * 60 * 30 * 15 * 49
1. ×, –, +, ÷, = **2.** ×, ÷, +, –, =
3. ×, +, ÷, –, = **4.** –, ÷, +, ×, =

35. Study the gven pattern carefully and select the number that can replace the question mark (?) in it.

28	58	118
21	44	90
47	96	?

1. 194 **2.** 150 **3.** 188 **4.** 176

36. Ratna walks 15 m towards the north and then turns right and walks 23 m. Then, he turns left and walks 16 m. After that, he turns left and walks 11 m. Then, he turns right and walks 17 m. then, he turns left and walks 12 m. He finally turns right and walks 19 m. In which direction and how far is he now with reference to the starting point?
1. North, 67 m **2.** South, 51 m
3. North, 48 m **4.** North, 52 m

37. Three of the following four letter-clusters are alike in a cetain wa and one is different. Pick the odd one out.
1. HSNZ **2.** DWJC **3.** BYHE **4.** UFAL

38. Which number will replace the question mark (?) in the following series?
17, 51, 58, 116, 123, 123, ?
1. 150 **2.** 140 **3.** 120 **4.** 130

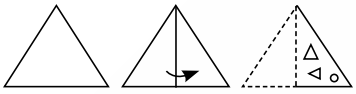
39. Which number will replace te question mark (?) in the following series?
112, ?, 83, 70, 58, 47, 37
1. 104 **2.** 97 **3.** 94 **4.** 100

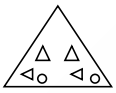
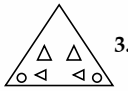
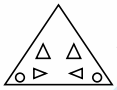
40. In a code language, if 'you are there' is written as 'ter der jer', 'we stay here' is written as 'yer mer ner', 'we are late' is written as 'ser ner der', and 'I stay there' is written as 'yer fer jer', then how would 'you stay late' be written in this language?
1. ter yer mer **2.** ter yer ser
3. ter mer ser **4.** der yer ser

41. Three of the following four letter-clusters are alike in a certain way and one s different. Pick the odd one out.
1. CFILO **2.** UXADG **3.** ORUXA **4.** OMSVY

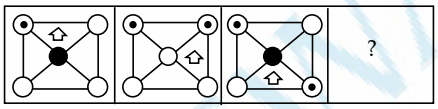
42. In a code language, 'DENT' is written as '51' and 'LOAD' is written as '40'. How will 'COST' be written in that language?
1. 57 **2.** 65 **3.** 75 **4.** 62

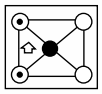
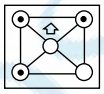
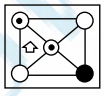
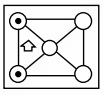
43. A paper is folded and cut as shown below. How will it appear wen unfolded?



1.  **2.**  **3.**  **4.** 

44. Select the figure that will replace the question mark (?) in the following figure series.



1.  **2.**  **3.**  **4.** 

45. In a code language. 'TORCH' is written as 'UNPSDI' and 'BEST' is written as 'CDFTU'. How will 'MARKS' be written in that language?
1. NZBSLT **2.** OZBSMT **3.** NABSLU **4.** NZCSLT

46. Select the option figure which is NOT embedded in the figure (X) given below (rotation is NOT allowed).

(X)

1.  **2.**  **3.**  **4.** 

47. Select the number-pair in which the two numbers are related in the same way as are the two numbers of the following number-pair.
16 : 224
1. 17 : 289 **2.** 22 : 440 **3.** 25 : 650 **4.** 20 : 400

48. In a code language, 'PLACARD' is written as 'TPEYEVH'. How will 'MONSTER' be written in that language?
1. QSROXIV **2.** RTSOXIV **3.** QSRRXIV **4.** PSSOXJV

49. 'A % B' means 'A is the mother of B'.
'A $ B' means 'A is the father of B'.
'A # B' means 'A is the brother of B'.
'A & B' means 'A s the sister of B'.
If J $ H # R % N & T # U % P, then which of the following statements is NOT correct?
1. R is the maternal grandmother of P
2. N is the sister of P
3. J is the maternal grandfather of N
4. R is the mother of U

50. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

14	16	60
11	17	?
15	18	99

1. 168 **2.** 78 **3.** 144 **4.** 89

General Knowledge and General Awareness

51. The medieval traveller Macro Polo as from:
1. Zurich **2.** Paris **3.** Istanbul **4.** Venice

52. During which of the following periods did Morarji Desai serve as the Deputy Prime Minister of India?
1. 1970-1971 **2.** 1967-1969 **3.** 1966-1967 **4.** 1964-1966

53. What is the Atomic Number of the element Einsteinium?
1. 98 **2.** 101 **3.** 100 **4.** 99

54. _____ is a mandatory mark found on all processed fruit products sold in India – such as packaged fruit beverages, fruit-jams, crushes and squashes, pickles, dehydrated fruit products, and fruit extracts – as per the Food Safety and Standards Act of 2006.
1. FPO **2.** BEE Star Rating
3. HALLMARK **4.** ISI

55. In which year did Afghanistan join SAARC? Ans
1. 2005 **2.** 2006 **3.** 2008 **4.** 2007

56. Which of the following writers announced the launch of his new book, 'Legend of Suheldev: The King Who Saved India', in June 2020?
1. Amish Tripathi **2.** Robin Sharma
3. Arvind Adiga **4.** Chetan Bhagat

57. The State is obligated to protect every monument, place and object of national importance and historic interest under Article of the Constitution of India.
1. 49 **2.** 46 **3.** 48 **4.** 47

58. In which month of 1915 did Mahatma Gandhi finally return from South Africa after his successful agitation against the racist regime?
1. March **2.** July **3.** May **4.** January

59. Who among the following has been a goalkeeper of the Indian national football team in the 1980s?
1. Atanu Bhattacharya **2.** Inder Singh
3. IM Vijayan **4.** Gautam Sarkar

60. The film 'Shatranj Ke Khiladi' is based on a short story by _____ .
1. Jaishankar Prasad **2.** Suryakant Tripathi Nirala
3. Ramdhari Singh Dinkar **4.** Munshi Premchand

61. Who was the President of India when Rajiv Gandhi was sworn in as Prime Minister?
1. R Venkataraman **2.** Shankar Dayal Sharma
3. Giani Zail Singh **4.** N Sanjiva Reddy

62. Which among the following birds impersonates the calls of other birds to steal food?
1. Drongo **2.** Eagle **3.** Owl **4.** Mynah

63. Polio is caused by which of the following organisms?
1. Virus **2.** Fungi **3.** Bacteria **4.** Protozoa

64. Who among the following was associated with Vaisheshika School of Philosophy?
1. Gautama **2.** Kanada **3.** Jaimini **4.** Patanjali

65. Which of the following Presidents of India also served as the Union Labour Minister?
1. V.V. Giri **2.** Zakir Hussain
3. Ramnath Kovind **4.** N Sanjeeva Reddy

66. Who among the following is NOT a Bharat Ratna recipient?
1. Nelson Mandela **2.** Mother Teresa
3. Abdul Ghaffar Khan **4.** Baldev Singh

67. The difference in temperature between two bodies is 30 degree centigrade. What is the difference in degree Fahrenheit?
1. 54 **2.** 86 **3.** 72 **4.** 64

68. Hydro Thermal Carbonisation technology developed at IIT, Kharagpur is a process of generation of energy from which of the following sources?
1. Solid waste with high moisture content
2. Water current in rivers
3. Hydropower in barrages and dams
4. Naturally available hydrocarbons

69. Which one among the following measures the same quantity as that is measured by the SI unit 'pascal'?
1. Joule **2.** Torr **3.** Newton **4.** Watt

70. 'Aloo Posto' is a traditional delicacy of which state of India?
1. Gujarat **2.** Uttarakhand
3. West Bengal **4.** Haryana

71. Which among the following is a mature-phase Harappan site situated in the state of Rajasthan?
1. Manda **2.** Chanhudaro
3. Nageshwar **4.** Kalibangan

72. Who is the first Indian to have won the Pulitzer Prize?
1. Gobind Behari Lal **2.** Geeta Anand
3. Sanghamitra Kalita **4.** Jhumpa Lahiri

73. In 2019, the Export Credit Guarantee Corporation of India (ECGC) has introduced the Export Credit Insurance Scheme(ECIS) called _____ .
1. NIRVIK **2.** NIRUKT
3. NIRANKUSH **4.** NIRVAY

74. Which of the following dams is located in Jharkhand?
1. Koyna **2.** Sardar Sarovar
3. Mettur **4.** Maithon

75. The 'Namami Gange Programme' is an Integrated Conservation Mission approved by the Union Government in:
1. June 2014 **2.** October 2013
3. April 2013 **4.** January 2014

76. In the context of ocean energy conversion, 'T' in OTEC stands for:
1. Thermodynamic **2.** Technological
3. Thermal **4.** Tidal

77. The Israel Institute of Technology has developed a concept named after the Indian mathematician _____ .
1. Bhaskaracharya **2.** Kaprekar
3. Ramanujan **4.** Aryabhata

78. In the Millikan's Oil Drop experiment, the oil drop is subjected to such forces whose nature does NOT fall under the category of:
1. Electrostatic **2.** Gravitational
3. Viscous **4.** Magnetostatic

79. Which among the following is a seaport of Bangladesh?
1. Dhaka **2.** Faridpur **3.** Chittagong **4.** Rajshahi

80. Which Indian state is bordered by Bangladesh on its north, south and west?
1. West Bengal **2.** Assam **3.** Meghalaya **4.** Tripura

81. 'A Plan of Economic Development for India', which was prepared by a cross-section of India's leading capitalists in 1944, was popularly known as the _____ Plan.
1. Mysore **2.** Allahabad **3.** Calcutta **4.** Bombay

82. The term 'Penalty Corner' is associated with which of the following games?
1. Basketball **2.** Football **3.** Volleyball **4.** Hockey

83. Conjunctivitis is an infection primarily related to _____ .
1. Stomach **2.** Knee **3.** Eye **4.** Heart

84. The 55th Jnanpith Award was given to _____ .
1. Akkitham Achuthan Namboothiri
2. Raghuveer Chaudhari
3. Amitav Ghosh
4. Bhalchandra Nemade

85. Which of the following pairs is INCORRECT with reference to paintings in India?
1. Phad Paintings – Rajasthan
2. Saura Paintings – Odisha
3. Bagh Paintings – Madhya Pradesh
4. Guler Paintings – Karnataka

86. The Union Budget of India 2020-21 allocated an amount of _____ crore for the education sector.
1. ₹99,300 **2.** ₹83,600 **3.** ₹95,800 **4.** ₹78,700

87. 'Ashta Mahasthana' refers to the eight significant places associated with the life of the Buddha. Which among the following is NOT one of those?
1. Sarnath **2.** Raigad **3.** Lumbini **4.** Bodh Gaya

88. The Government of India added the prefix 'MG' to the National Rural Employment Guarantee Act in the year _____ .
1. 2009 **2.** 2008 **3.** 2012 **4.** 2007

89. If the size of the nucleus of an atom is compared with a cricket ball, then the radius of the atom is approximately equal to how many kilometres?
1. 0.5 **2.** 0.005 **3.** 5 **4.** 0.05

90. 'Femto' means ten raised to the power of _____.
1. –12 **2.** –16 **3.** –20 **4.** –15

91. Who among the following was one of the speakers after Jawaharlal Nehru to address the Parliament on the midnight of 15 August 1947?
1. C Rajagopalachari **2.** Rajendra Prasad
3. Sarvepalli Radhakrishnan **4.** Sardar Vallabhbhai Patel

92. Which among the following Articles of the Constitution of India deals with the right to free and compulsory education of all children in the age group of 6-14 years?
1. 31A **2.** 21A **3.** 101 **4.** 74

93. Which among the following peaks is NOT located in Nepal Himalayas?
1. Annapurna **2.** Mount Everest
3. Lhotse **4.** Kamet

94. Smriti Mandhana is a _____ .
1. left arm batsman, left arm bowler
2. left arm batsman, right arm bowler
3. right arm batsman, right arm bowler
4. right arm batsman, left arm bowler

95. Who is the author of the book 'A Better India: A Better World'?
1. Shashi Tharoor **2.** NR Narayana Murthy
3. Ratan Tata **4.** Gurcharan Das

96. Who is the only Indian to have won an individual Olympic gold medal?
1. Karnam Malleswari **2.** Abhinav Bindra
3. Leander Paes **4.** PV Sindhu

97. Bhand Pather theatre is a tradition primarily of which of the following States/UTs of India?
1. Kerala **2.** Dadra and Nagar Heveli
3. Jammu and Kashmir **4.** Goa

98. Kadam Rasul Mosque, whose construction is characterised by the use of bricks and black marble, is situated at _____ .
1. Alwar **2.** Purnea **3.** Mandu **4.** Gaur

99. Project Elephant was launched in India in the year _____.
1. 1992 **2.** 1985 **3.** 1973 **4.** 1972

100. The 'Gandhara' School of Art was influenced by the art from which of the following European countries?
1. Greece **2.** Italy **3.** Hungary **4.** Belgium

Quantitative Aptitude

101. If 14331433 × 1422 × 1425 is divided by 12, then what is the remainder?
1. 9 **2.** 6 **3.** 8 **4.** 3

102. What is the least number which when divided by 15, 18 and 36 leaves the same remainder 9 in each case and is divisible by 11?
1. 1080 **2.** 1071 **3.** 1269 **4.** 1089

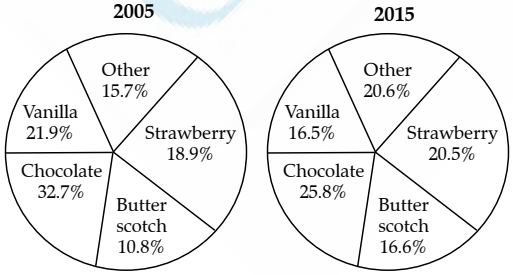
103. The value of $\frac{6.35\times6.35\times6.35+3.65\times3.65\times3.65}{63.5\times63.5+36.5\times36.5-63.5\times36.5}$ is equal to:
1. 0.01 **2.** 10 **3.** 0.1 **4.** 1

104. The radius of the base of a cylinder is 14 cm and its curved surface area is 880 cm^2. Its volume (in cm^3) is:
$\left(\text{Take } \pi=\frac{22}{7}\right)$
1. 3080 **2.** 6160 **3.** 1078 **4.** 9240

105. If $4(\text{cosec}^2 57° - \tan^2 33°) - \cos 90° - y\tan^2 66°\tan^2 24° = \frac{y}{2}$, the value of y is:
1. $\frac{1}{3}$ **2.** $\frac{8}{3}$ **3.** 8 **4.** $\frac{3}{8}$

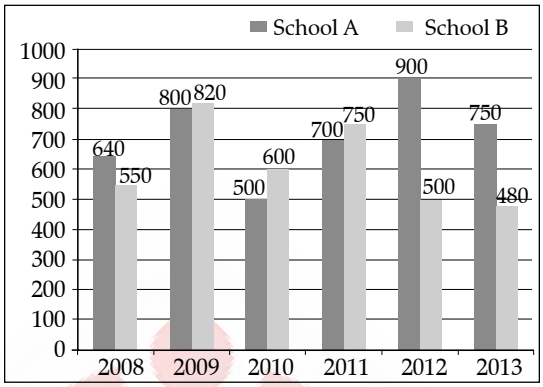
106. Two pipes A and B can fill a tank in 15 hours and 18 hours, respectively. Both pipes are opened simultaneously to fill the tank. In how many hours will the empty tank be filled?
1. $8\frac{2}{11}$ **2.** $7\frac{2}{11}$ **3.** $9\frac{2}{11}$ **4.** $10\frac{2}{11}$

107. The given pie charts represent the popularity of ice-cream flavours in the years 2005 and 2015.



If a percentage point shift results in animal additional sales of ₹10,000, how much (in ₹), did the combined annual strawberry and butterstoch sales increase from 2005 to 2015?
1. ₹65,000 **2.** ₹10,000 **3.** ₹74,000 **4.** ₹37,000

108. The given bar graph shows the number of students of two schools over a period of six years.



In the bar graph, what is the ratio of the averagge of the total students from school A to the average of the total students from school B?
1. 429 : 799 **2.** 370 : 429 **3.** 429 : 370 **4.** 799 : 429

109. A and B can do a job in 10 days and 5 days, respectively. They worked together for two days, after which B was replaced by C and the work was finished in the next three days. How long will C alone take to finish 60% of the job?
1. 18 days **2.** 30 days **3.** 25 days **4.** 24 days

110. Seven years ago, the ratio of the ages of A and B was 4 : 5. Eight years hence, the ratio of the ages of A and B will be 9: 10. What is the sum of their present ages in years?
1. 32 **2.** 41 **3.** 56 **4.** 82

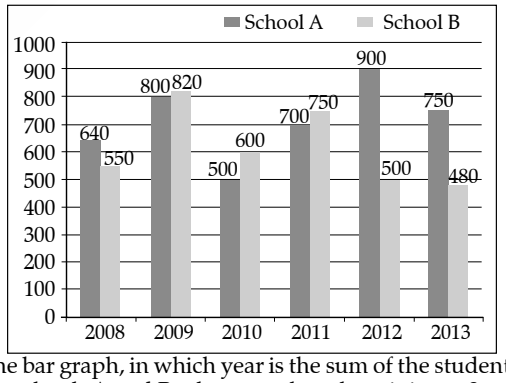
111. If $a^2 + b^2 + c^2 + 216 = 12(a + b - 2c)$, then $\sqrt{ab - bc + ca}$ is:
1. 6 **2.** 4 **3.** 8 **4.** 3

112. If A's salary is 60% more than B's salary, then by what percentage is B's salary less than that of A?
1. 37.5% **2.** 45% **3.** 33.3% **4.** 47.7%

113. A, B and C started a business by investing ₹13,750, ₹16,250 and ₹18,750, respectively. If B's share in the proft earned by them s ₹5,200, what is the total profit (in ₹) earned by them together?
1. 15,600 **2.** 17,500 **3.** 16,600 **4.** 18,200

114. Three successive discounts 22%, 17% and 11% are equivalent to a single discount of:
1. approximately 50% **2.** approximately 42%
3. approximately 45% **4.** approximately 25%

115. The given bar graph shows the number of students of two schools over a period of six years.



In the bar graph, in which year is the sum of the students from schools A and B taken together, the minimum?
1. 2010 **2.** 2011 **3.** 2012 **4.** 2013

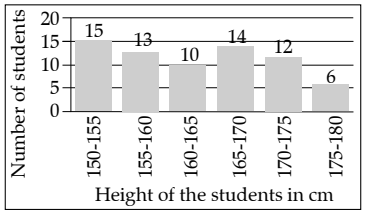
116. The value of $\dfrac{40-\frac{2}{4}\text{ of }32}{37-\frac{3}{4}\text{ of }(34-6)}$ is:

1. 1 **2.** $-\frac{1}{2}$ **3.** 0 **4.** $\frac{1}{2}$

117. The average weight of A, B and C is 65 kg. If the average weight of A and B is 63.5 kg, and the average weight of A and C is 67.5 kg, then the weight of A (in kg) is:

1. 67 **2.** 65 **3.** 68 **4.** 60

118. The given histogram shows the height of the students.



The number of students whose height is in the class interval 170 – 175 is what per cent less than the number of students whose heiht is in the interval 165-170?
(correct to one decimal place)

1. 11.5% **2.** 17.3% **3.** 14.3% **4.** 19.5%

119. A circle is inscribed in a triangle ABC. It touches sides AB, BC and AC at points R, P and Q, respectively. If AQ = 3.5 cm, PC = 4.5 cm and BR = 7 cm, then the perimeter (in cm) of the triangle ΔABC is:

1. 45 **2.** 15 **3.** 28 **4.** 30

120. The perimter of a square is the same as the perimeter of a rectangle. The perimeter of the square is 40 m. If its breadth is two-thirds of its length, then the area (in m^2) of the rectangle s:

1. 96 **2.** 84 **3.** 100 **4.** 121

121. *PA* and *PB* are two tangents from a point *P* outside the circle with centre *O*. If *A* and *B* are points on the circle such that $\angle APB = 128°$, then $\angle OAB$ is equal to:

1. 38° **2.** 64° **3.** 72° **4.** 52°

122. Pipes A and B can fill a tank in 16 hours and 24 hours, respectively, whereas pipe C can empty the full tank in 40 hours. All three pipes are opened together, but pipe A is closed after 10 hours. After how many hours will the remaining part of the tank be filled?

1. 10 **2.** 20 **3.** $12\frac{1}{2}$ **4.** $15\frac{1}{2}$

123. if $4 - 2\sin^2\theta - 5\cos\theta = 0$, $0° < \theta < 90°$, then the value of $\cos\theta + \tan\theta$ is:

1. $\frac{1-2\sqrt{3}}{2}$ **2.** $\frac{2-\sqrt{3}}{2}$ **3.** $\frac{1+2\sqrt{3}}{2}$ **4.** $\frac{2+\sqrt{3}}{2}$

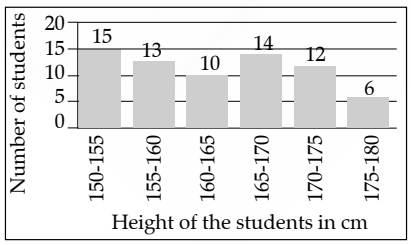
124. If each side of a rectangle is decreased by 11%, then its area will decrease by:

1. 25% **2.** 20.79% **3.** 24.31% **4.** 21.13%

125. One side of a rhombus is 13 cm and one of its diagonals is 10 cm. What is the area of the rhombus (in cm^2)?

1. 90 **2.** 60 **3.** 120 **4.** 30

126. The given histogram shows the height of the students.



What s the percentage of students whose height is in the class interval 160-170?
(correct to the nearest integer)

1. 39 **2.** 34 **3.** 25 **4.** 51

127. If $x^4 + x^{-4} = 194$, $x > 0$, then the value of $x + \frac{1}{x}$ is:

1. 4 **2.** 6 **3.** 8 **4.** 14

128. Sunita invested ₹12,000 on simple interest at the rate of 10% p.a. to obtain a total amount of ₹20,400 after a certain period. For how many years did she invest to obtain the above amount?

1. 9 **2.** 6 **3.** 7 **4.** 8

129. If a nine-digit number $765x3678y$ is divisible by 72, then the value of $(x - y)$ is:

1. 0 **2.** –2 **3.** –1 **4.** 2

130. The price of diesel increased by 16%. A person wants to increase his expenditure on diesel by 10% only. By what percentage, correct to one decimal place, should be reduce his consumption?

1. 3.7% **2.** 4.5% **3.** 5.2% **4.** 6.5%

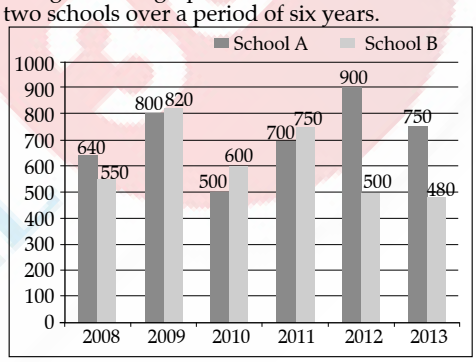
131. A person was standing on a road near a mall. He was 1425 m away from the mall and able to see the top of the mall from the road in such a way that the top of a tree, which is in between him and the mall, was exactly in line of sight with the top of the mall. The tree height is 10 m and it is 30 m away from him. How tall (in m) is the mall?

1. 475 **2.** 300 **3.** 525 **4.** 425

132. The average of twelve number is 39. The average of the last five numbers is 35, and that of the first four umbers is 40. The fifth number is 6 less than the sixth number and 5 more than the seventh number. The average of the fifth and sixth number is:

1. 44 **2.** 47 **3.** 50 **4.** 39

133. The given bar graph shows the number of students of two schools over a period of six years.



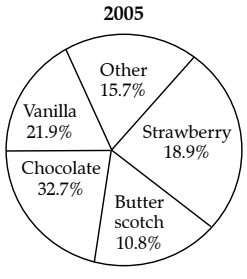
In the graph, what is the ratio of the students taken fo the years 2009, 2011, 2013 together from school A to the students taken for the yeas 2008, 2012, 2013 together from school B?

1. 25 : 17 **2.** 17 : 25 **3.** 18 : 25 **4.** 25 : 18

134. A ladder leaning against a wall make an angle θ with the hoizontal ground such that $\cos\theta = \frac{5}{13}$. If the height of the top of the ladder from the wall is 18 m, then what is the distance (in m) of the foot of the ladder from the wall?

1. 19.5 **2.** 7.5 **3.** 13 **4.** 18

135. The given pie chart represents the popularity of ice-cream flavours in the year 2005.



In 2005, If 10% of the 'other' category is mix fruit flavour and 1570 people surveyed preferred mix fruit flavour, then how man people were surveyed?

1. 4,00,000 **2.** 1,50,000 **3.** 1,00,000 **4.** 1,75,000

136. If decreasing 110 by $x\%$ gives the same result as increasing 50 by $x\%$, then $x\%$ of 650 is what percentage more than $(x + 20)\%$ of 180?
(correct to nearest integer)

1. 90% **2.** 80% **3.** 136% **4.** 154%

137. The side sof a triangle aee 24 cm, 26 cm and 10 cm. At each of its vertices, circles of radius 4.2 cm are drawn. What is the area (in cm^2) of the triangle, excluding the portion covered by the sectors of the circles? $\left(\pi = \frac{22}{7}\right)$

1. 120 **2.** 27.72 **3.** 92.28 **4.** 105.86

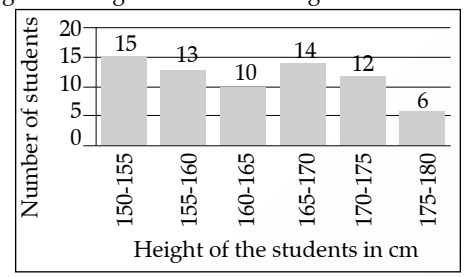
138. In a ΔABC, the bisectors of $\angle B$ and $\angle C$ meet at O. If $\angle BOC = 142°$, then the measure of $\angle A$ is:

1. 52° **2.** 68° **3.** 116° **4.** 104°

139. Two successive discounts, each of $x\%$ on the marked price of an article, are equal to a single discount of ₹331.20. If the marked price of the article is ₹920, then the value of x is:

1. 25 **2.** 20 **3.** 18 **4.** 15

140. The given histogram shows the height of the students.



1. 8 **2.** 9 **3.** 3 **4.** 7

141. A is twice as good a workman as B and together they finis a piece of work in 13 days. In how many days will B alone finish the work?

1. 18.5 **2.** 39 **3.** 21 **4.** 42

142. If $\left(5\sqrt{5}x^2 - 3\sqrt{3}y^3\right) \div (\sqrt{5}x - \sqrt{3}y = (Ax^2 + By^2 + Cxy)$, then the value of $\left(3A + B - \sqrt{15}C\right)$ is:

1. 8 **2.** 5 **3.** 3 **4.** 12

143. The value of $8 - 3 \div 6$ of $2 + \left(4 \div 4 \text{ of } \frac{1}{4}\right) \div 8 + \left(4 \times 8 \div \frac{1}{4}\right) \times \frac{1}{8}$ is:

1. $-\frac{97}{4}$ **2.** $\frac{7}{4}$ **3.** $-\frac{7}{4}$ **4.** $\frac{97}{4}$

144. In ΔABC, $BD \perp AC$ at D. E is a point on BC such that $\angle BEA = x°$. If $EAC = 46°$ and $\angle EBD = 60°$, then the value of x is:

1. 76° **2.** 72° **3.** 78° **4.** 68°

145. A person sold an article at a loss of 16%. Had he sold it for ₹660 more, he would have gained 8%. What should be the selling price (in ₹) to gain a profit of 12%?

1. 2,970 **2.** 3,200 **3.** 2,750 **4.** 3,080

146. A sum amounts to ₹7,562 in 4 years and to ₹8,469.44 in 5 years at a certain rate per cent per annum, when the interest is compounded yearly. The rate of interest is:

1. 12% **2.** 20% **3.** 8% **4.** 15%

147. A takes 2 hours 30 minutes more than B to walk 40 km. If a doubles his speed, then he can make it in 1 hour less than B. How much time (in hours) does A require for walkig a 40 km distance?

1. 9 **2.** 7 **3.** 5 **4.** 6

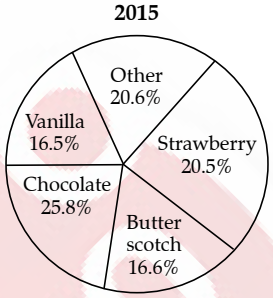
148. Two numbers are in the ratio 7 : 11. If their HCF is 28, then the difference between the two umbers is:

1. 28 **2.** 196 **3.** 308 **4.** 112

149. A train x running at 74 km/h crosses another train y running at 52 km h in the opposite direction in 12 seconds. If the length of y is two-thirds that of x, then what is the length of x (in m)?

1. 200 **2.** 168 **3.** 210 **4.** 252

150. The given pie chart represents the popularity of ice-cream flavours in the year 2015.



In 2015, if the total sale of vanilla flavour is for ₹3,300, then the total sale (in ₹) for chocolate flavour is:

1. ₹5,160 **2.** ₹4,100 **3.** ₹4,120 **4.** ₹3,320

English Comprehension

151. Select the most appropriate word which means the same as the group of words given.
A place where games are played for money

1. university **2.** casino
3. gymnasium **4.** church

152. Select the wrongly spelt word.

1. occurring **2.** exprimant **3.** sediment **4.** umbrella

153. Select the most appropriate meaning of the given idiom.
Little by little

1. not much **2.** gradually **3.** only once **4.** a few

154. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
Because she didn't love him, she had to marry him.

1. despite **2.** since
3. No substitution required **4.** although

155. Select the wrongly spelt word.

1. pupil **2.** capacity **3.** teacher **4.** ablity

156. Select the most appropriate word to fill in the blank.
Let us know _____ you change your mind.

1. although **2.** suppose **3.** however **4.** in case

157. Select the most appropriate word which means the same as the group of words given.
Extreme mental or physical suffering

1. agony **2.** acute **3.** rapture **4.** ecstasy

158. Select the most appropriate word which means the same as the group of words given.
Be more successful than someone

1. beat **2.** win **3.** succeed **4.** outdo

159. Select the most appropriate meaning of the given idiom.
A dry run

1. a poor harvest **2.** a run on dry ground
3. a rehearsal **4.** a slow run

160. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
Had I a rich person, I would share my wealth.
1. Were I **2.** I am
3. No substitution required **4.** Had I been

161. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
When I left my house this morning, it was raining.
1. rains **2.** No substitution required
3. rained **4.** is raining

162. Select the most appropriate word to fill in the blank.
I'm sure I _____ them at the party last night.
1. am seeing **2.** was seeing
3. saw **4.** have seen

163. Select the most appropriate word to fill in the blank.
We respect you but we don't agree _____ your ideas.
1. for **2.** with **3.** by **4.** to

164. Select the most appropriate synonym of the given word.
FOUNDATION
1. structure **2.** base **3.** building **4.** top

165. Identify the segment in the sentence which contains a grammatical error.
If there is no error, then select the option 'No error'.
When he goes on a business trip, he is usually taking his wife.
1. when he goes **2.** No error
3. he is usually taking his wife **4.** on a business trip

In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.
Let us take a brief look at the planet (1)_____ which we live. As the earth hurtles through space at a (2) _____ of 70, 000 miles per hour, it spins, as we all know, on its axis, (3)_____ causes it to be flattened at the Poles. Thus, if you (4)_____ to stand at the North or South Pole you would be 13 miles nearer the centre of the earth (5)_____ if you stood on the Equator.

166. Select the most appropriate option to fill in blank no.1.
1. by **2.** from **3.** on **4.** for

167. Select the most appropriate option to fill in blank no.2.
1. speed **2.** distance **3.** mass **4.** force

168. Select the most appropriate option to fill in blank no.3.
1. that **2.** who **3.** where **4.** which

169. Select the most appropriate option to fill in blank no.4.
1. have **2.** was **3.** are **4.** were

170. Select the most appropriate option to fill in blank no.5.
1. than **2.** when **3.** from **4.** where

171. Select the most appropriate meaning of the given idiom.
Call on
1. step out **2.** telephone **3.** announce **4.** visit

172. Identify the segment in the sentence which contains a grammatical error.
If there is no error, then select the option 'No error'.
Sh! Someone listens to our conversation.
1. No error **2.** Sh! Someone
3. listens to **4.** our conversation

173. Select the most appropriate ANTONYM of the given word.
WARM
1. spongy **2.** hot **3.** cool **4.** springy

174. Select the most appropriate meaning of the given idiom.
Look out
1. locate **2.** find out **3.** be careful **4.** search

175. Select the most appropriate words to fill in the blanks.
Today computer viruses spread _____ a dizzying speed _____ way of file downloads.
1. by; by **2.** in; from **3.** at; from **4.** at; by

176. Identify the segment in the sentence which contains a grammatical error.
If there is no error, then select the option 'No error'.
The sun rises at 6.35 yesterday morning.
1. No error **2.** yesterday morning
3. the sun **4.** rises at 6.35

177. Select the wrongly spelt word.
1. brakes **2.** refrence **3.** beaker **4.** solution

178. Select the most appropriate synonym of the given word.
FICTION
1. literature **2.** fact **3.** fantasy **4.** truth

179. Select the most appropriate word to fill in the blank.
I _____ something burning now.
1. smell **2.** have smelt
3. smelt **4.** have been smelling

180. Identify the segment in the sentence which contains a grammatical error. If there is no error, then select the option 'No error'.
All of us were a little nervous when we came into this room today.
1. when we came into this room today
2. all of us were
3. No error
4. a little nervous when

181. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.
The secretary talks over the phone right now.
1. was talking **2.** No substitution required
3. is talking **4.** talked

182. Select the most appropriate ANTONYM of the given word.
FERTILE
1. fruitful **2.** barren **3.** strong **4.** productive

183. Select the most appropriate word which means the same as the group of words given.
Something done because one wants to, not by force
1. threatened **2.** subjected **3.** coerced **4.** voluntary

184. Select the wrongly spelt word.
1. irrigation **2.** central **3.** presure **4.** electric

185. Select the most appropriate ANTONYM of the given word.
FLAW
1. feature **2.** perfection **3.** defect **4.** weakness

186. Select the most appropriate ANTONYM of the given word.
FEEBLE
1. strong **2.** fault **3.** foible **4.** weak

187. Select the most appropriate ANTONYM of the given word.
ALIVE
1. active **2.** living **3.** life **4.** dead

188. Select the most appropriate synonym of the given word.
ACCURATE
1. complete **2.** correct **3.** sincere **4.** appropriate

189. Select the most appropriate word which means the same as the group of words given.
An exact or a very close copy (of something)
1. artificial **2.** substitute **3.** replica **4.** forgery

190. Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.

She is taking all kinds of medicine wherever she goes.

1. takes **2.** took
3. was taking **4.** No substitution required

191. Select the most appropriate meaning of the given idiom.

Give a hand

1. assist **2.** donate an organ
3. encourage **4.** clap hands

192. Select the wrongly spelt word.

1. supporting **2.** easier **3.** difficult **4.** optsion

193. Identify the segment in the sentence which contains a grammatical error. If there is no error, then select the option 'No error'.

I am hearing a strange noise now.

1. noise now **2.** a strange
3. I am hearing **4.** No error

194. Select the most appropriate synonym of the given word.

IMITATION

1. genuine **2.** original **3.** fake **4.** real

195. Select the most appropriate synonym of the given word.

JUST

1. courtly **2.** partial **3.** favouring **4.** fair

Read the given passage and answer the questions that follow.

Many of us have enjoyed visiting a zoo and consider it a day out having fun. Seeing real animals face to face can be thrilling and exciting, but many people wonder whether the animals themselves, while entertaining us, are suffering in the zoos.

Many zoos do not have enough money to provide the animals with the basic features of a proper environment. Most animals are put in an artificial environment (e.g., cages). This isolation from their natural habitat can amount to cruelty. In some zoos, we see concrete floors for burrowing animals like rabbits. Cruelty may be shown in ways other than physical abuse or starvation.

Big predators like lions and tigers are created to chase and hunt. By depriving them of these activities, we forget the reason for which they have evolved. These big cats lie in cages in the zoo eating the food given to them and they have nothing else to do. Highly intelligent and curious animals like chimpanzees and polar bears may become frustrated in a zoo; they need a challenging environment.

Zoo supporters might argue that zoos provide educational opportunities to the visitors, especially children; if we didn't have animals in zoos, children wouldn't see them at all and be ignorant about them. We live at a time when animals in their natural habitat can be seen on TV or computers, even smart phones, while sitting at home. Therefore, the aim should be to conserve animals in the wild, in protected areas called sanctuaries.

196. According to the passage, animals in zoos suffer cruelty:

1. by being kept in artificial environments
2. by being physically tortured or abused
3. by being starved to death
4. by being forced to perform for the visitors

197. Which of the following best states the author's purpose in the passage?

1. Putting endangered species of animals in zoos is the best way of protecting and saving them.
2. We can show our concern for animals better by supporting protected spaces for them in the natural environment.
3. If animals were not kept in zoos, children would not be able to see and know about them at all.
4. One of the main reasons for which big predators have evolved is hunting.

198. 'Burrowing' animals:

1. are solitary animals
2. dig the earth for food and shelter
3. chase and hunt other animals
4. are intelligent and curious

199. According to the passage, we visit zoos _____.

1. to watch the frustration of animals in cages
2. to see how animals behave in zoos
3. to spend a day out for fun and excitement
4. to see the animals in cages

200. The word 'predators' (in paragraph 3) means:

1. animals which are starving in zoos
2. animals which are kept in their natural habitat
3. animals which kill others for food
4. animals which are killed for food

Answer Key

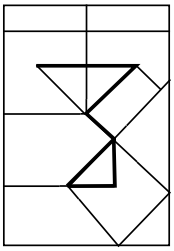
1.	(3)	**2.**	(2)	**3.**	(4)	**4.**	(3)	**5.**	(3)	**6.**	(1)	**7.**	(4)	**8.**	(1)	**9.**	(4)	**10.**	(1)
11.	(2)	**12.**	(4)	**13.**	(4)	**14.**	(4)	**15.**	(4)	**16.**	(4)	**17.**	(1)	**18.**	(1)	**19.**	(1)	**20.**	(4)
21.	(4)	**22.**	(3)	**23.**	(1)	**24.**	(3)	**25.**	(4)	**26.**	(4)	**27.**	(2)	**28.**	(2)	**29.**	(2)	**30.**	(3)
31.	(3)	**32.**	(3)	**33.**	(1)	**34.**	(3)	**35.**	(1)	**36.**	(1)	**37.**	(1)	**38.**	(4)	**39.**	(2)	**40.**	(2)
41.	(4)	**42.**	(2)	**43.**	(3)	**44.**	(4)	**45.**	(1)	**46.**	(1)	**47.**	(2)	**48.**	(1)	**49.**	(2)	**50.**	(1)
51.	(4)	**52.**	(2)	**53.**	(4)	**54.**	(1)	**55.**	(4)	**56.**	(1)	**57.**	(1)	**58.**	(4)	**59.**	(1)	**60.**	(4)
61.	(3)	**62.**	(1)	**63.**	(1)	**64.**	(2)	**65.**	(1)	**66.**	(4)	**67.**	(1)	**68.**	(1)	**69.**	(2)	**70.**	(3)
71.	(4)	**72.**	(1)	**73.**	(1)	**74.**	(4)	**75.**	(1)	**76.**	(3)	**77.**	(3)	**78.**	(4)	**79.**	(3)	**80.**	(4)
81.	(4)	**82.**	(4)	**83.**	(3)	**84.**	(1)	**85.**	(4)	**86.**	(1)	**87.**	(2)	**88.**	(1)	**89.**	(3)	**90.**	(4)
91.	(3)	**92.**	(2)	**93.**	(4)	**94.**	(2)	**95.**	(2)	**96.**	(2)	**97.**	(3)	**98.**	(4)	**99.**	(1)	**100.**	(1)
101.	(2)	**102.**	(4)	**103.**	(3)	**104.**	(2)	**105.**	(2)	**106.**	(1)	**107.**	(3)	**108.**	(3)	**109.**	(1)	**110.**	(2)
111.	(1)	**112.**	(1)	**113.**	(1)	**114.**	(2)	**115.**	(1)	**116.**	(1)	**117.**	(1)	**118.**	(3)	**119.**	(4)	**120.**	(1)
121.	(2)	**122.**	(3)	**123.**	(3)	**124.**	(2)	**125.**	(3)	**126.**	(2)	**127.**	(1)	**128.**	(3)	**129.**	(4)	**130.**	(3)
131.	(1)	**132.**	(2)	**133.**	(1)	**134.**	(2)	**135.**	(3)	**136.**	(3)	**137.**	(3)	**138.**	(4)	**139.**	(2)	**140.**	(2)
141.	(2)	**142.**	(3)	**143.**	(4)	**144.**	(1)	**145.**	(4)	**146.**	(1)	**147.**	(2)	**148.**	(4)	**149.**	(4)	**150.**	(1)
151.	(2)	**152.**	(2)	**153.**	(2)	**154.**	(4)	**155.**	(4)	**156.**	(4)	**157.**	(1)	**158.**	(4)	**159.**	(3)	**160.**	(1)
161.	(2)	**162.**	(3)	**163.**	(2)	**164.**	(2)	**165.**	(3)	**166.**	(3)	**167.**	(1)	**168.**	(4)	**169.**	(4)	**170.**	(1)
171.	(4)	**172.**	(3)	**173.**	(3)	**174.**	(3)	**175.**	(4)	**176.**	(4)	**177.**	(2)	**178.**	(3)	**179.**	(1)	**180.**	(3)
181.	(3)	**182.**	(2)	**183.**	(4)	**184.**	(3)	**185.**	(2)	**186.**	(1)	**187.**	(4)	**188.**	(2)	**189.**	(3)	**190.**	(1)
191.	(1)	**192.**	(4)	**193.**	(3)	**194.**	(3)	**195.**	(4)	**196.**	(1)	**197.**	(2)	**198.**	(2)	**199.**	(3)	**200.**	(3)

Answers with Explanations

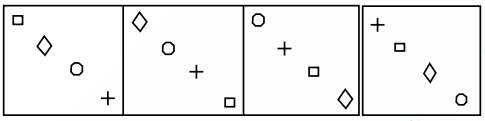
1. **Option (3) is correct.**
The pattern is to add 1 to the number and then multiply the number we get,
Column 2: $(8 + 1) \times (6 + 1) = 63$
Column 3: $(11 + 1) \times (5 + 1) = 72$
Column 1: $(x + 1) \times (7 + 1) = 48 \Rightarrow x + 1 = 6 \Rightarrow x = 5$
Hence, 5 is the correct answer.

2. **Option (2) is correct.**
FL is the same in all the words and so now we will check the next letter of each word which are e, o and we know that e comes before o and thus, it will be the 1st word and then we will check the letter of each word which is o again and therefore it is the same in all words. Now check the next letter which are w, o, o, a. We also know that a is the first letter in English alphabet and thus will be the 2nd word and so on.
Therefore, the arrangement will be 1, 5, 4, 3, 2.
Hence, 1, 5, 4, 3, 2 is the correct answer.

3. **Option (4) is correct.**
The question figure is shown below and it is embedded in the given figure.



4. **Option (3) is correct.**
The pattern is that every element is moving all the position via the centre. For example, the small shaped square is moving all the positions. Similarly, all elements are taking every position.

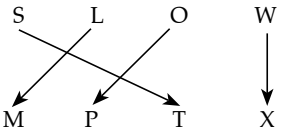


5. **Option (3) is correct.**
The pattern is that this is a double series. One series is in 1st series, we have a vowel followed by another vowel. For example, A will be followed by E and E will be followed by I and I will be followed by O and O will be followed by U.
AE EI IO OU
And the other series is KQ LR ? NT. In this series, we have to add 1 to the letter to get the another letter. For example, K + 1 = L, L + 1 = M, M + 1 = N and Q + 1 = R, R + 1 = S, S + 1 = T.
Hence, MS is the correct answer.

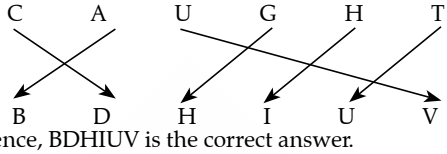
6. **Option (1) is correct.**
The logical arrangement of the following words will be when a person is applying for a job, then he will have to follow the process of job. First, he will submit Application, then he has to go through the scrutiny and then interview and job offer. Finally, he will join the company or organization.
Hence, 2, 1, 3, 4, 5 is the correct answer.

7. **Option (4) is correct.**
Given $25 - 5 \times 50 \div 10 + 35$
After interchanging the signs $\times$ and $-$ we get,
$25 \times 5 - 50 \div 10 + 35 = 125 - 5 + 35$
$= 120 + 35 = 155$
Therefore, LHS = RHS.

8. **Option (1) is correct.**
The pattern is



Similarly,



Hence, BDHIUV is the correct answer.

9. **Option (4) is correct.**
The pattern is as follows:

HBS	GDP	FFM	?	DJG
H +1	G +1	F +1	E +1	D
B +2	D +2	F +2	H +2	J
S +3	P +3	M +3	J +3	G

Hence, EHJ is the correct answer.

10. **Option (1) is correct.**
Total number of students = 90.
Boys : Girls = 2 : 1
$3 \rightarrow 90$
$1 \rightarrow 30$
$2 \rightarrow 60$
Boys = 60 and girls = 30
Now, total is the same but now Boys : Girls = 3 : 2
$5 \rightarrow 90$
$1 \rightarrow 18$
$3 \rightarrow 54$
$2 \rightarrow 36$
Boys = 3 = 54 and Girls = 2 = 36
Therefore, 60 – 54 = 6.
Hence, 6 is the correct answer.

11. **Option (2) is correct.**
To find the day on the same date of the same month:
In case of an ordinary year – Given day + 1 day
In case of a leap year – Given day + 2 days
Given: 18 October 2006 = Wednesday
18 October 2005 = Wednesday Tuesday
18 October 2004 = Tuesday – 1 days = Monday
18 October 2003 = Monday – 2 days = Saturday
18 October 2002 = Saturday – 1 day = Friday
18 October 2001 = Friday – 1 day = Thursday
18 October 2000 = Thursday – 1 day = Wednesday.
17 October 2000 = Wednesday – 1 day = Tuesday
Hence, Tuesday is the correct answer.

12. **Option (4) is correct.**
The pattern is as follows:

82	?(99)	119	142	168	197
17	20	23	26	29	

Hence, 99 is the correct answer.

13. **Option (4) is correct.**
The pattern is taking row wise we get,
Row 1: $54 - 40 = 14$
and $14 \times 4 = 56$
Row 2: $68 - 57 = 11$
and $11 \times 4 = 44$
Row 3: $47 - 39 = 8$
and $8 \times 4 = 32$
Hence, 32 is the correct answer.

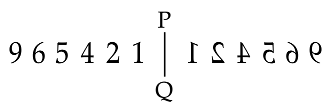
14. Option (4) is correct.

We know that in the given dice, the numbers 4, 2 are adjacent to 5 and the remaining is only 1 which is opposite to 5.

Hence, 1 is the correct answer.

15. Option (4) is correct.

When we place the mirror on the right side, then the elements appear on the right side will appear on the left side and the elements which appear on the left side will appear on the right side and the position of the element will also change from left to right.



16. Option (4) is correct.

(1) N and 0 are in different teams.

(2) M is sitting facing N. From these two lines, it is clear that M and O are in the same team and N is in a different team.

Option 1: N, L and M — N cannot be in the same team as M. They both are facing each other

Option 2: 0, K and N — It's clearly given N and O are in different teams.

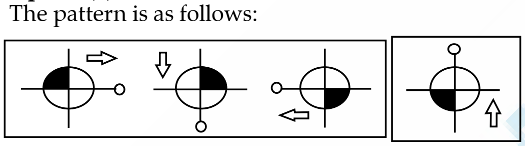
Option 3: K, M and P — With M, there should be O in the team so K, M and P is not possible

Option 4: LN and P — N is sitting to the immediate right of L and P is at the comer so this is possible team.

Hence, L, N and P is the correct answer.

17. Option (1) is correct.

The pattern is as follows:



Highlighted area of the circle moving clockwise by 90° and arrow is moving anticlockwise by 90°.

18. Option (1) is correct.

PNH is coded as 265 and OXB is coded as 187; NUB is written as 248.

First, we check the common letters and numbers. We have B common in the last row lines and we have 8 common in these codes, thus we can say 8 is the code for B.

B → 8

N → 2

U → 4

Hence, the code for U is 4.

19. Option (1) is correct.

Given that A → +, B → ×, C → –, D → ÷

$35 \times 2 + 5 \times (40 - 37) + (8 \times 4) \div 16 - 14$

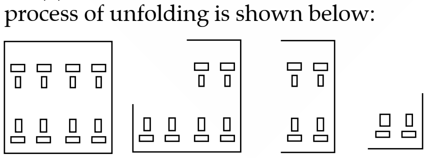
$= 70 + 5(3) + (32) \div 16 - 14$

$= 70 + 15 + 2 - 14 = 73$

Hence, 73 is the correct answer.

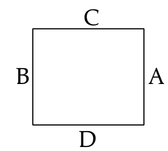
20. Option (4) is correct.

The process of unfolding is shown below:



21. Option (4) is correct.

Draw the arrangement first.

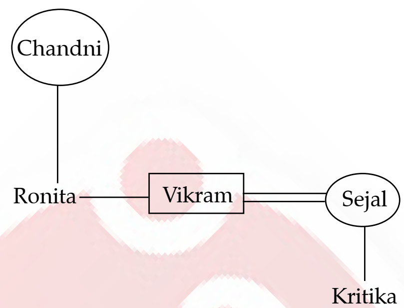


From the arrangement, we can say that to the immediate left of C is A.

Hence, A is the correct answer.

22. Option (3) is correct.

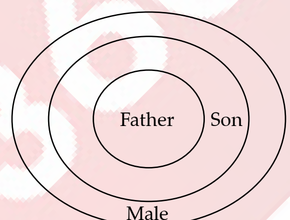
Draw a blood relation tree we get,



Thus, Chandni is the paternal grandmother of Kritika.

Hence, Paternal grandfather is the correct answer.

23. Option (1) is correct.



24. Option (3) is correct.

The pattern is as follows:

For the first letter of each element: X + 7 = E, E + 7 = L, L + 7 = S, S + 7 = Z

For the second letter of each element: M + 1 = N, N + 1 = O, O + 1 = P, P + 1 = Q

For the third letter of each element: T + 7 = A, A + 7 = H, H + 7 = O, O + 7 = V

Hence, ZQV is the correct answer.

25. Option (4) is correct.

According to the question,

$A + A^2 + A^3 = 399$

Cube number near by 399 is 343. 343 is cube of 7.

Now, put the value.

$7 + 49 + 343 = 399$

So, now we know A =7

$B + B^2 + B^3 = 819$

Similarly, Cube number near by 819 is 729. 729 is cube of 9.

$9 + 81 + 729 = 819$

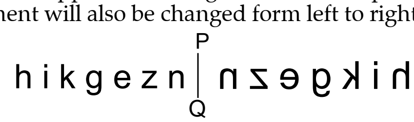
So, from here B = 9

Square of the number obtained by adding Number A and Number B = $(7 + 9)^2 = (16)^2 = 256$.

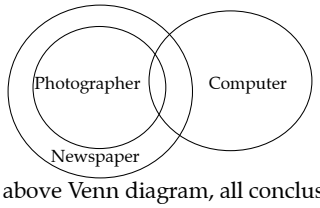
Hence, "256" is the correct answer.

26. Option (4) is correct.

When we place the mirror on the right side, then the elements which appear on the right side will appear on the left side and the elements which appear on the left side will appear on the right side and the position of the element will also be changed form left to right.

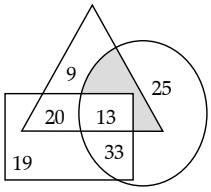


27. Option (2) is correct.
Draw a Venn diagram,



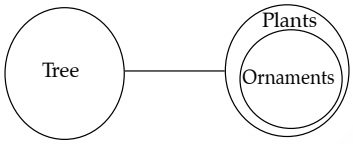
From the above Venn diagram, all conclusions follow.

28. Option (2) is correct.
We have to find the area which is covered by the circle and triangle both only.



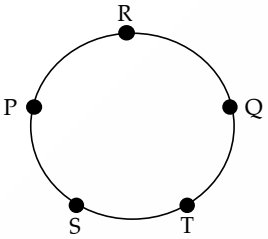
Hence 18 is the correct answer.

29. Option (2) is correct.
Draw Venn Diagram.



From the above diagram, both conclusions I and II follow.

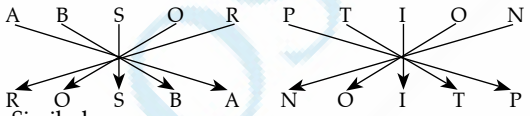
30. Option (3) is correct.
Draw a Circular arrangement.



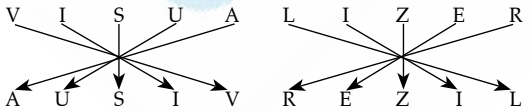
From the circular arrangement, we can say that P is the 2nd to the left of T.
Hence, P is the correct answer.

31. Option (3) is correct.
We know that alternate pairs are opposite to each other. Therefore, & will be opposite to $ and @ will be the opposite to %.
Hence, $ is the opposite of #.

32. Option (3) is correct.
The pattern is as follows:



Similarly



Hence, AUSIVREZIL is the correct answer.

33. Option (1) is correct.
The pattern is

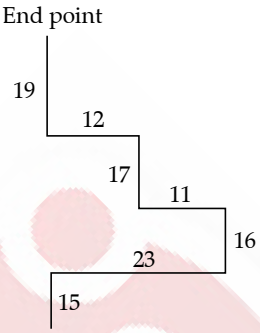
2430		(810)?		270		90		30		10
	÷3		÷3		÷3		÷3		÷3	

Hence, 810 is the correct answer.

34. Option (3) is correct.
Using the option 3, we get
$31 \times 2 + 60 \div 30 - 15 = 62 + 2 - 15 = 64 - 15 = 49$
Therefore, LHS = RHS.

35. Option (1) is correct.
The pattern is as follows:
Row 1: $28 \times 2 + 2 = 58, 58 \times 2 = 118$
Row 2: $21 \times 2 + 2 = 44, 44 \times 2 + 2 = 90$
Row 3: $47 \times 2 + 2 = 96, 96 \times 2 + 2 = 194$
Hence, 194 is the correct answer.

36. Option (1) is correct.



From starting to end point distance is 15 + 17 + 16 + 19 = 67
Hence, North 67 m is the correct answer.

37. Option (1) is correct.
The pattern is
HSNZ → H + S + N + Z = 8 + 19 + 14 + 26 = 67
DWJC → D + W + J + C = 4 + 23 + 10 + 3 = 40
BYHE → B + Y + H + E = 2 + 25 + 8 + 5 = 40
UFAL → U + F + A + L = 21 + 6 + 1 + 12 = 40
Hence, HSNZ is the correct answer.

38. Option (4) is correct.
The pattern is as follows:

15		51		58		116		123		123		130
	×3		+7		×2		+7		×1		+7	

Hence, 130 is the correct answer.

39. Option (2) is correct.
The pattern is as follows,

112		(97)?		83		70		58		47		37
	15		14		13		12		11		10	

Hence, 97 is the correct answer.

40. Option (2) is correct.
Given
You are there 'ter der jer'
We stay here 'yer mer ner'.
We are late 'ser ner der'.
I stay there 'yer fer jer'.
In the 1st and last statement, we have the same and in the codes, we have der which is the same. Similarly,
are → der
we → ner
late → ser
stay → yer
There → jer
You → ter
Therefore you stay late is written as ter yer ser.
Hence, ter yer ser is the correct answer.

41. Option (4) is correct.
The pattern is as follows:

C	+3	F	+3	I	+3	L	+3	O
U	+3	X	+3	A	+3	D	+3	G
O	+3	R	+3	U	+3	X	+3	A
O	+3	R	+3	U	+3	X	+3	A

Hence, OMSVY is correct.

42. Option (2) is correct.

Given DENT = 51, LOAD = 40.

D		E		N		T
4		5		14		20 + 8 = 51
L		O		A		D
12	+	15	+	1	+	4 + 8 = 40

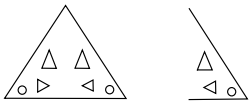
Similarly,

C		O		S		T
3	+	15	+	19	+	20 + 8 = 65

Hence, 65 is the correct answer.

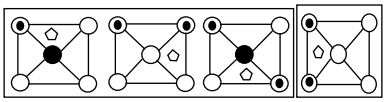
43. Option (3) is correct.

The process of unfolding is shown below



44. Option (4) is correct.

The pattern is that the arrow is being rotated by 90° clockwise direction and the middle circle is being highlighted alternatively.



Hence, option 4 is the correct answer.

45. Option (1) is correct.

Given TORCH → UNPSDI

T + 1 = U, O – 1 = N, O + 1 = P, P + 1 = R,
R + 1 = S, C + 1 = D, H + 1 = I

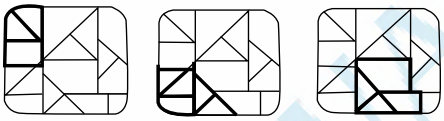
Similarly,

M + 1 = N, A – 1 = Z, A + 1 = B, R + 1 = S,
K + 1 = L, S + 1 = T.

Hence, NZBSLT is the correct answer.

46. Option (1) is correct.

It Is shown below how all options except option 1 is embedded in the below figure.



Hence, option 1 cannot be embedded and is the correct answer.

47. Option (2) is correct.

The pattern is $n(n-1)-n$.

$16 \times 15 - 16 = 224$

Similarly, $22 \times 21 - 22 = 440$

Hence, 22 : 440 is the correct answer.

48. Option (1) is correct.

The pattern is as follows

P	L	A	C	A	R	D
+4	+4	+4	+4	+4	+4	+4
T	P	E	G	E	V	H

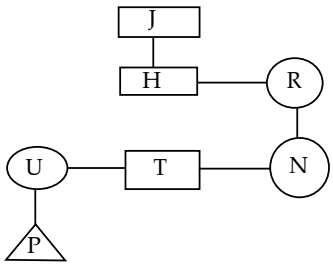
Similarly,

M	O	N	S	T	E	R
+4	+4	+4	+4	+4	+4	+4
Q	S	R	W	X	I	V

Hence, QSRWXIV is the correct answer.

49. Option (2) is correct.

Draw the blood relation tree and we get



From the above tree, we can say that N is the maternal aunt of P and not the sister.

50. Option (1) is correct.

The pattern is (1st number + 2nd number) × (2nd number – 1st number).

Row 1: 14 + 16 = 30 16 – 14 = 2

30 × 2 = 60

Row 2: 11 + 17 = 28 17 – 11 = 6

28 × 6 = 168

Row 3: 15 + 18 = 33 18 – 15 = 3

33 × 3 = 99

Hence, 168 is the correct answer.

51. Option (4) is correct.

Marco Polo was born in Venice, Italy, in 1254. In 1271-95, he was a Venetian merchant and adventurer who traveled from Europe to Asia. He spent 17 years in China during this time. The classic travel book 'Travels of Marco Polo' was written by Marco Polo himself. Century Tourists and Their Country Marco Polo lived in the thirteenth century, from 1254 to 1323. (from Venice, Italy) Ibn Battuta lived in the fourteenth century (1304–77). (from Morocco) 1413-82, 15th century Kamal al-Din ibn Ishaq al-Samarqandi Abd al-Razzaq (from Samarqand) Afanasii Nikitich Nikitin (years spent in India), 1466-72 (fifteenth century, from Russia) 1518 (sixteenth century) (visit to India) Duarte Barbosa (Portuguese) died in 1521-1562. (year of death) Reis, Seydi Ali (from Istanbul, Turkey) Antonio Monserrate (1536-1600) (from Spain) 1626-31, seventeenth century (years spent in India) Balkhi, Mahmud Wali (from Balkh) Peter Mundy, 1600-67 (from England) Jean-Baptiste Tavernier (1605-89) (from Paris, France) Francois Bernier (1620–88) (from Paris, France).

52. Option (2) is correct.

In 1967, Morarji Desai was appointed Deputy Prime Minister. He resigned in 1969 to become the leader of the opposition to Indira Gandhi. During this time, India's President was Dr Sarvepalli Radhakrishnan. Indira Gandhi served as Prime Minister of India from 1967 to 1977, and again from 1980 to 1984. Morarji Desai passed away on April 10, 1995. Morarji Ranchhodji Desai (29 February 1896 – 10 April 1995) was an Indian independence activist and politician who served as India's fourth Prime Minister from 1977 to 1979, leading the Janata Party-led government. During his long political career, he held numerous important government positions, including Chief Minister of Bombay State, Home Minister, Finance Minister, and India's 2nd Deputy Prime Minister.

53. Option (4) is correct.

Einsteinium is a synthetic element with the atomic number 99 and the symbol Es. Albert Ghiorso and colleagues discovered it in 1952. It belongs to the Actinides Group and has a melting point of 860°C,

1580°F, and 1133 K. It is found in the 7th Period of the Periodic Table. Further Information Californianium is a radioactive chemical element with the atomic number 98 and the symbol Cf. Fermium is a synthetic element with the atomic number 100 and the symbol Fm. Mendelevium is a synthetic element with the atomic number 101 and the symbol Md (formerly Mv). All of these elements can be found in the 7th Period of the Periodic Table.

54. Option (1) is correct.
FPO is an abbreviation for Fruit Products Order. The Ministry of Food Processing Industry issues the FPO mark and develops the standards for it. This mark ensures that the product was made in a sanitary environment. Also included are the specifications and quality control requirements, which ensure that the product is safe to consume. Further Information All food processing industries, including synthetic beverages, syrups, and sharbat, require FPO certification. Vinegar, whether natural or synthetic. Pickles, as well as dehydrated fruits and vegetables. Squashes, crushes, cordials, and barley water are all examples. Chutneys, jams, jellies, and marmalades. Tomato products, including ketchup and sauces. Fruits and peels that have been preserved, candied or crystallized. Fruits, juices, pulps, and vegetables in cans and bottles. Frozen Vegetables and fruits. Aerated sweetened water with or without fruit juice and pulp. Flakes of fruit cereal. Important Considerations Since 1955, the ISI mark has served as a standard compliance mark for industrial products in India. The BEE Star Rating (from 1 to 5) is an energy efficiency rating assigned to electrical appliances. A hallmark is an official mark or series of marks struck on precious metal items such as platinum, gold, silver, and palladium.

55. Option (4) is correct.
Afghanistan became the SAARC's eighth member in April 2007. The South Asian Association for Regional Cooperation (SAARC) was founded in Dhaka on December 8, 1985. SAARC's headquarters are in Kathmandu (Nepal). Kabul is Afghanistan's capital. SAARC's member countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. SAARC's Most Important Goals: To promote the welfare of South Asian peoples and to improve their standard of living. To boost economic growth. The region's social and cultural development. Cooperation with international and regional organizations that have similar goals and objectives.

56. Option (1) is correct.
Amish Tripathi has announced the launch of his new book, 'Legend of Suheldev: The King Who Saved India', in June 2020. His latest novel, published by Westland Publications Pvt Ltd, is set in 11th-century India. The book begins with the invasion of Mahmud of Ghazni and the massacre at the holy Somnath Temple. He also wrote the book The Immortals of Meluha.

57. Option (1) is correct.
Part IV (Articles 36 - 51) of the Indian Constitution contains Article 49. Part IV consists of State Policy Directive Principles (DPSPs). It was taken from the Irish Constitution, which was taken from the Spanish Constitution. DPSPs, unlike Fundamental Rights, are non-justiciable (cannot be enforced in courts). Article 46 - Promotion of the educational and economic interests of Scheduled Castes, Scheduled Tribes, and other underprivileged groups. Article 47 - The state has to improve public health by improving nutrition and living standards. Article 48 - Agriculture and animal husbandry organization. Important Considerations Other Important DPSP Articles: Article 37 - No court shall have jurisdiction over it. Article 40 states that the state must take steps to organize village panchayats. Article 44 is the Uniform Civil Code. Article 50: Separation of the Judiciary and the Executive. Promote International Peace and Security (Article 51).

58. Option (4) is correct.
On January 9, 1915, Mahatma Gandhi touched down at the Apollo Bunder (now Apollo Bandar) in Bombay. He had been given the title Kaiser-I-Hind. In May 1893, Gandhi arrived in South Africa. Gandhi Ji used Satyagraha for the first time in South Africa in 1907, in response to the Black Act. Mahatma Gandhi spearheaded significant movements. Champaran Uprising (1917) The Kheda Movement (1918) Movement of Khilafat (1919) Non-Participation Movement (1920) Dandi March for Civil Disobedience (1930) Quit India Campaign (1942).

59. Option (1) is correct.
Atanu Bhattacharya was another important goalkeeper in the game's long history in India. Bhattacharya spent 12 years with the national team and was a member of the Asian All-Star XI in the same year. Bhattacharya was instrumental in India's qualification for the 1984 Asian Cup. From 2005 to 2006, Atanu Bhattacharya was the Indian Senior Team's goalkeeping coach. Inder Singh was a member of the Indian national team from 1963 to 1975. The Indian national football team's striker & scored 23 goals in the 1974 Santosh Trophy, which is still a record, and won the Arjuna Award in 1969. IM Vijayan Vijayan made his international debut for the Indian national football team in 1989, representing India in tournaments such as the Nehru Cup, SAAF Cup, SAF Games, pre-Olympics, and pre-World Cup. Vijayan becomes the first player to be named Player of the Year on multiple occasions. He won the award three times: in 1993, 1997, and 1999. He was also awarded the Arjuna Award in 2003 for his outstanding performance. Gautam Sarkar was a member of PK's East Bengal and Mohun Bagan squads that won the "treble" in 1972 and 1977, respectively.

60. Option (4) is correct.
The renowned Hindu writer Premchand's short story "Shatranj ke Khiladi" or "The Chess Players" was published in 1924. It is set during the reign of Wajid Ali Shah when Lucknow was immersed in opulence. Through the two main protagonists, Mir and Mirza, who are engrossed in chess to the point of being oblivious to everything else, Premchand portrays a purportedly feudal mentality of a whole culture. Satyajit Ray wrote and directed the film 'Shatranj Ke Khiladi'. Munshi Premchand, an Indian author of novels and short stories in Hindi and Urdu, was a pioneer in adapting Indian themes to Western literary styles. Premashram (1922; "Love Retreat") is one of Premchand's most popular novels. Rangabhumi (The Arena) (1924). Ghaban ('Embezzlement,' 1928). Karmabhumi (Arena of Actions) (1931). Godan (1936; The Gift of a Cow) (1936; The Gift of a Cow). Jaishankar Prasad, also known as Mahakavi, has a special place in the worlds of Hindi theatre and fiction. Butterfly, Skeleton, Iravati, and Stories are among the works of Jaishankar Prasad Major. Ramdhari Singh Dinkar was a well-known Hindi author. Dinkar has established himself as a poet of the best heroic rasa of the modern era. Urvashi 1972 for the Library Award received several such prestigious honors and prizes. Kurukshetra, Urvashi, Renuka, Rashmirathi, Dvangit, Bapu, Dhoop Chharan, chilli fun, and sun splash are some of his major works. Suryakant Tripathi, also known as 'Nirala,' was a prominent poet of the Chhayawadi era of Hindi poetry. One of Hindi literature's most well-known authors. Parimal, Archana, evening Kakli, placenta, Geetika, worship, two shelters, Ragvirag, music boom, Anima, and Truffle are some of the major works.

61. Option (3) is correct.
Giani Zail Singh was the country's first Sikh president (1982–87). From 1956-62, he served in the Rajya Sabha (upper chamber of the Indian parliament), and from 1972-77, he was Chief Minister of Punjab. Giani Zail Singh infuriated the government even more by refusing to sign a 1987 bill authorizing official censorship of private mail. Rajiv Gandhi served as Prime Minister from 1984 to 1989. Zail Singh, Giani From 1982 to 1987, he served as President. President R. Venkataraman from 1987 to 1992 When asked who was President at the time Rajiv Gandhi was sworn in as Prime Minister, the answer will be Giani Zail Singh. Rajiv Gandhi served as Prime Minister from 1984 to 1989. Zail Singh, Giani From 1982 to 1987, he served as President. President R. Venkataraman from 1987 to 1992 When asked who was President at the time Rajiv Gandhi was sworn in as Prime Minister, the answer will be Giani Zail Singh. Droupadi Murmu is the current President of India (as of September 2022). President is the Supreme Commander of the Indian Armed Forces. President Pratibha Patil is India's first female president and the state's first Maharashtrian. Mr Rajiv Gandhi was India's youngest Prime Minister, and possibly one of the world's youngest-elected heads of government.

62. Option (1) is correct.
Drongos frequently attack much larger birds (such as hawks and crows) that may harm their eggs or young; harmless birds nest near drongos for protection. The majority of drongos range in length from 18 to 63.5 cm (7 to 25 inches) and are glossy black. Drongos live in forests, open countries, and gardens from Africa to Central Asia, Australia, and the western Pacific islands. The 33-cm (13-inch) black drongo, also known as the king crow because it can intimidate the true crow, is one of the most common birds of southern Asia. Eagle, is any of several large, heavy-beaked, big-footed birds of prey in the Accipitridae family. Eagles, because of their strength, have been a symbol of war and imperial power since Babylonian times. Owl, a member of a homogeneous order of primarily nocturnal raptors found nearly worldwide. Owls became symbolic of intelligence because it was believed that they foretold events. Mynah, also spelled myna, is any of several Asian birds of the family Sturnidae (order Passeriformes) that resemble crows.

63. Option (1) is correct.
A virus is a small, simple infectious agent that can multiply only in living cells of animals, plants, or bacteria. Poliomyelitis, also known as polio, is a crippling and potentially fatal disease caused by the poliovirus. The Poliovirus is highly contagious and spreads through direct contact. And can infect the spinal cord, causing paralysis (inability to move parts of the body). Nucleic acid (deoxyribonucleic acid) or RNA (ribonucleic acid) and protein are found in all true viruses. The first virus, the Tobacco mosaic virus, was discovered by two scientists. Fungi are abundant in soil and air, in lakes, rivers, and seas, on and within plants and animals, in food and clothing, and in the human body. Fungi, along with bacteria, break down organic matter and release carbon, oxygen, nitrogen, and phosphorus into the soil and atmosphere. Bacteria, a singular bacterium, is any of a class of microscopic single-celled organisms that thrive in almost every environment on Earth. Historically, all prokaryotic cells were referred to as bacteria and were classified as belonging to the prokaryotic kingdom Monera. The protozoan is a single-celled organism that is heterotrophic (it uses organic carbon as a source of energy). Because protozoans are eukaryotes, they all have a "true," or membrane-bound, nucleus. Representative dinoflagellates, amoebas, paramecia, and the malaria-causing Plasmodium are all protozoans.

64. Option (2) is correct.
Maharishi Kanad was a natural scientist and philosopher from ancient India. He founded the Indian philosophy school Vaisheshika. He coined the term 'parmanu'. In his Sanskrit book Vaisheshika Sutra, he explained the atomic theory of matter. Pakudha Kaccayana was an Indian teacher who lived in the sixth century BCE. He was a believer in atomism. Everything, he believed, is made up of seven eternal elements. Ramanujan is a mathematician from India. He made several contributions to analytical number theory. Sarvepalli Radhakrishnan was India's first Vice President and its second President. Every year on September 5, India commemorates his birthday as Teachers' Day. In 1954, he was awarded the Bharat Ratna.

65. Option (1) is correct.
V.V. Giri was appointed minister of labor and industries when the Congress Party formed a government in Madras state (now Tamil Nadu) in 1937. After the Congress governments resigned and the anti-British "quit India" movement was launched in 1942, he rejoined the labour movement and was imprisoned alongside his colleagues. In 1952, he was elected to the Lok Sabha, one of India's two chambers of parliament. He was appointed Minister of Labour in the Central Government of India but resigned in 1954. Giri was elected vice president of India in 1967, and when President Zakir Husain died in 1969, he became acting president and announced his intention to run for president. He served as India's President from August 24, 1969, to August 23, 1974. Zakir Husain, India's first Muslim president, holds largely ceremonial duties. From 1926 to 1948, he was the vice-chancellor of the Muslim National University in Aligarh (later relocated to New Delhi). He served on the executive board of the United Nations Educational, Scientific, and Cultural Organization from 1956 to 1958. (UNESCO). In 1957, he was appointed governor of Bihar state, and in 1962, he was elected vice president of India. He was elected President of India in 1967 as the official candidate of the Congress Party and served until his death. Ram Nath Kovind (born October 1, 1945, in Paraukh, Uttar Pradesh, India) is an Indian lawyer and politician who served as India's President (2017). After Kocheril Raman Narayanan, he was the second Dalit to be elected. In the winter of 1979, Neelam Sanjiva Reddy, who had been elected president in 1977, called for new elections and dissolved parliament. Dr. Rajendra Prasad was elected as India's first President. On July 25, 2017, Ram Nath Kovind was inaugurated as the 14th Indian President. Draupadi Murmu was elected as India's 15th President on July 21, 2022.

66. Option (4) is correct.
From June 1942 to September 1946, Baldev Singh served as the Government of Punjab's Minister for Development. Defence Minister in the Government of India from August 1947 to May 1952; Member of the First Lok Sabha from 1952 to 1957. Nelson Mandela: Nelson Mandela was awarded the Bharat Ratna in 1990. Mandela was the President of South Africa and the leader of the anti-apartheid movement in South Africa (1994–99). Mandela's African National Congress movement, known as the "Gandhi of South Africa," was influenced by Gandhian philosophy. He received the Nobel Peace Prize in 1993. Mother Teresa was awarded the Bharat Ratna in 1980. In 1979, she was awarded the Nobel Peace Prize. She was referred to as the Saint of the Gutters. In 1973, she was also the first person to receive the Templeton Prize. Mother Teresa's given name was Anjez Gonxhe Bojaxhiu. Abdul Ghaffar Khan: In 1987, Abdul Ghaffar Khan was awarded the Bharat Ratna. Abdul Ghaffar Khan is dubbed "Frontier Gandhi" by many. He was an independent

activist, and Pashtun leader Khan was a Mahatma Gandhi supporter. In 1920, he joined the Khilafat Movement, and in 1929, he founded the Khudai Khidmatgar ("Red Shirt Movement"). The Bharat Ratna is the highest civilian honor, given for exceptional service to the advancement of art, literature, and science, as well as for outstanding public service. It is also not mandatory to award the Bharat Ratna every year. The original award specifications called for a 35-mm-diameter circular gold medal with the sun and the Hindi legend "Bharat Ratna" above and a floral wreath below. The reverse was supposed to bear the state emblem and motto. It was supposed to be worn around the neck with a white ribbon. After a year, this design was modified. The Bharat Ratna provision was introduced in 1954. The famous scientist Chandrasekhara Venkata Raman was the first Indian to receive this award. Our former President, Dr. A. P. J. Abdul Kalam, has also received this prestigious award (1997). There is no written provision stating that the Bharat Ratna should only be awarded to Indian citizens.

67. Option (1) is correct.
$F = 9/5 * C + 32$
$F1 = 9/5 * C_1 + 32$
$F2 = 9/5 * C_2 + 32$
$F1 – F2 = 9/5 (C1 – C2) = 9/5 * (30) = 54$ degree Farenheit.
Each Celsius degree equals 5/9ths of a Fahrenheit degree.
Each Fahrenheit degree equals 9/5ths of a Celsius degree.
So, $30 * 9/5 = 54$ degrees Fahrenheit.

68. Option (1) is correct.
The moisture in the waste is used to benefit the process, which relies on water for the reaction. The biofuel produced as a result of the recovered output can help to reduce air pollution. Hydro-Thermal Carbonization (HTC) is a process that can convert municipal solid waste into biofuel, soil amendments, and absorbents. Solid waste management is the collection, treatment, and disposal of solid waste that has served its purpose or is no longer useful. Improper municipal solid waste disposal can lead to unsanitary conditions, which can lead to pollution of the environment and outbreaks of vector-borne disease—that is, diseases spread by rodents and insects.

69. Option (2) is correct.
A Torr is a non-SI unit of pressure with a standard atmosphere ratio of 760 to 1. It is precisely 1/760 of a standard atmosphere (101325 Pa). One torr equals 101325/760 pascals (133.32 Pa). Joule is a SI work or energy unit. It is equal to the work done by one newton of force acting through one meter. Newton, It is a SI force unit. One newton is the amount of force required to accelerate one kilogram of mass one meter per second squared in the direction of the applied force. Watt is a Power SI unit. It is equivalent to one joule of work per second, or 1/746 horsepower.

70. Option (3) is correct.
Bengali Aloo Posto is a straightforward dish made of spiced potatoes cooked in chilies, turmeric, and poppy seeds. A delicious side dish or main course for any occasion. Other popular West Bengal dishes include Luchi-Alur Dom, Kosha Mangsho, Daab Chingri, Keemar Doi Bora, Bhetki Macher Paturi, Shukto, and others. The GI Registry of India has granted Banglar Rasogolla GI status to West Bengal. Further Information Gujarati dishes include Khandvi, Dhokla, Bardoli ki Khichdi, Methi ka Thepla, Dal Dhokli, and Undhiyu. Some famous Uttrakhand dishes include Kafuli, Bhang Ki Chutney, Garhwal ka Fannah, Phaanu, Baadi, Chainsoo, and Kumaoni Raita. Haryana's well-known dishes include Hara Dhania Cholia, Bajra Aloo Roti, Alsi ki Pinni, and Besan Ki Masala Roti.

71. Option (4) is correct.
Kalibangan, an ancient Indus Valley civilization site, is located in northern Rajasthan state, northwestern India. The site contains both pre-Harappan and Harappan remains, and the transition between the two cultures can be seen there. Luigi Pio Tessitori, an Italian Indologist and linguist, discovered the site. The most significant discovery of Kalibangan is a plowed field, a wooden furrow, and seven fire altars in a row, all of which point to the practice of sacrifice. Manda's location is in Jammu and Kashmir. It is the Himalayan Foothills' most northern Harappan site. Chanhudaro This location is in Pakistan. Excavations include a bead factory and the use of lipstick. Nageshwar This location is in Gujarat's Kutch district. Excavations: A shell construction site.

72. Option (1) is correct.
The Pulitzer Prize is an award given in the United States for achievements in newspaper, magazine, and online journalism, literature, and musical composition. Gobind Behari Lal, along with four others, won the Pulitzer Prize for journalism in 1937 for his coverage of science. Gobind Behari Lal was an Indian-American journalist and freedom fighter. Geeta Anand received the Pulitzer Prize for Explanatory Reporting in 2003. Jhumpa Lahiri received the Pulitzer Prize for Fiction in 2000. In 2016, Sanghamitra Kalita received the Pulitzer Prize for Breaking News Reporting.

73. Option (1) is correct.
Niryat Rin Vikas Yojana is abbreviated as NIRVIK. Finance Minister Nirmala Sitaraman announced this scheme in the Budget 2020-21. The NIRVIK scheme will provide enhanced insurance coverage and lower premiums for small exporters. The Export Credit Insurance Scheme (ECIS), guarantees insurance coverage of up to 90% of the principal and interest. The Export Credit Guarantee Corporation currently offers a credit guarantee of up to 60% loss.

74. Option (4) is correct.
The Maithon Dam is about 48 kilometers from the coal city of Dhanbad. It is situated on the banks of the Barakar River. Damodar Valley Corporation (DVC Ltd) created this back in 1948. The dam is approximately 15712 feet long and 165 feet long. The underground power station can generate approximately 60,000 KW of electricity. Other significant dams in Jharkhand include the Chandil Dam, the Getalsud Dam, the Masanjor JH Dam, the North Koel Dam, the Panchat Hill Dam, the Tenughat Dam, the Tilaiya Dam, and the Upper Shankh Dam. The Koyna Dam The Koyna Dam is one of Maharashtra's largest dams. The dam's primary purpose is hydroelectricity, with some irrigation in neighboring areas. It has a capacity of 1,960 MW installed. It is built on the River Koyna, a tributary of the Krishna. Dam Sardar Sarovar The Sardar Sarovar Dam is in Kevadiya, Gujarat, India. It has a capacity of 1,450 MW installed. It serves multiple purposes. It is built on the Narmada River. The Mettur Dam is Tamil Nadu's largest dam. It is built on the Cauvery River.

75. Option (1) is correct.
Namami Gange is an Integrated Conservation Mission that was approved as a 'Flagship Programme' by the Union Government in June 2014 with a budget outlay of Rs. 20,000 Crore to achieve the twin goals of effective pollution abatement and conservation and rejuvenation of the national River Ganga. The highlights of the "Namami Gange" program The 2014-2015 budget allocates over Rs. 20,000 crores for the next five years. The project will cover eight states, 47 towns, and twelve rivers. Over 1,632-gram panchayats on Ganga's banks will be open defecation-free by 2022. Several ministries,

including the Environment, Urban Development, Shipping, Tourism, and Rural Development Ministries, are collaborating with the nodal Water Resources Ministry on this project.

76. Option (3) is correct.
Ocean Thermal Energy Conversion (OTEC) is a marine renewable energy technology that converts solar energy absorbed by the oceans into electricity. The OTEC concept was developed in the 1880s by Jacques-Arsene d'Arsonval. The United States, Japan, and several other countries began experimenting with OTEC systems in the 1970s and 1980s to develop a viable source of renewable energy. The first OTEC plant, a closed-cycle system mounted on a US Navy barge in 1979 by American researchers, was capable of producing approximately 15 kilowatts of net power.

77. Option (3) is correct.
The Israel Institute of Technology has created a concept known as the "Ramanujan machine," named after one of India's greatest mathematicians, Srinivasa Ramanujan. The Ramanujan Machine is a novel approach to mathematics that generates conjectures (mathematical statements proposed as true statements) for fundamental constants by harnessing your computer power. Srinivasa Ramanujan was born on December 22, 1887, and his birthday is commemorated as National Mathematics Day in his honor. Landau-Ramanujan constant, Mock theta functions, Ramanujan conjecture, Ramanujan prime, Ramanujan-Soldner constant, Ramanujan theta function, Ramanujan's sum, Rogers-Ramanujan identities, Ramanujan's master theorem, Ramanujan-Sato series are examples of notable works.

78. Option (4) is correct.
R. A. Millikan, an American physicist, pioneered the oil-drop experiment for precisely measuring the charge of an electron in 1913. He discovered that an oil-charge droplet was always an integral multiple of an elementary charge, 1.602 10-19 C. Millikan's experiment demonstrated that electric charge can be quantized. The mass (m) of the electron could be calculated using the values of charge (e) and specific charge (e/m). A tiny charged droplet of oil was suspended between two metal electrodes in the experiment. The downward gravitational force was counterbalanced by upward drag and electric forces. Millikan determined the charge on oil droplets in mechanical equilibrium using known parameters such as oil density, electric field, and mass.

79. Option (3) is correct.
Chittagong is Bangladesh's largest and most important seaport. Additional Information Dhaka is Bangladesh's capital city. It is Bangladesh's largest city. Faridpur is a Bangladeshi district city in the Dhaka Division, known for its jute mills, sugar mills, and Hilsa fish. Rajshahi is a large city. It is Bangladesh's most important commercial center. It is also referred to as Silk City or the City of Education. Rajshahi is well-known for Rajshahi silk, a type of clothing popular in the Indian subcontinent.

80. Option (4) is correct.
Tripura is surrounded by Bangladesh on three sides: north, south, and west. The international border accounts for 84% of its total border area. Assam and Mizoram are Tripura's neighboring states. Tripura is India's third-smallest state. Tripura's capital is Agartala. Pakistan is located west of India, northeast of China, Nepal, and Bhutan, and east of Bangladesh and Myanmar. Bangladesh shares borders with the Indian states of Assam, Mizoram, Tripura, Meghalaya, and West Bengal. Uttar Pradesh, Uttarakhand, West Bengal, Bihar, and Sikkim are Indian states that border Nepal. Myanmar, India's neighbor, shares borders with Indian states such as Nagaland, Mizoram, Arunachal Pradesh, and Manipur.

81. Option (4) is correct.
In January 1944, a group of Indian industrialists and technocrats (J. R. D. Tata, Ghanshyam Das Birla, Ardeshir Dalal, Lala Shri Ram, Kasturbhai Lalbhai, Ardeshir Darabshaw Shroff, Sir Purshottamdas Thakurdas, and John Mathai) proposed the Bombay Plan for India's post-independence 15-year economic development. It was also known as A Plan of Economic Development for India, and it was published in two parts in 1944 and 1945. Sanjay Baru recently published The Bombay Plan: Blueprint for Economic Renewal. This book revisits the Bombay Plan to demonstrate how it was not only foresighted in its development approach.

82. Option (4) is correct.
A defensive infringement in the penalty circle or a deliberate infringement within the defensive 23-metre area results in a Penalty Corner. It is a penalty assessed against the opposing team. Basketball 5 free throws, common fouls, underheads, technical fouls, overheads, and so on. 6 Spikers, Booster, Deuce, Smash, Sidearm, Penetration, and so on. Kick, Goal, Penalty kick, Dribble, Offside, Move, Hattrick, Foul, Left out, Right out, Stopper, Defender, Side back, Pass, Baseline, Rebound, Comer back, and so on. Hockey 11: Bully, Short Corner, Hattrick, Goal, Penalty Corner, Penalty Strike, Pushin, Cut, Scoop, Dribble, Centre Forward, Halfback, Astroturf, Sudden Death Off-side, Tiebreaker, Carried, Stick, Striking circle, Undercutting, and so on.

83. Option (3) is correct.
The conjunctiva is a mucous membrane that is thin and transparent. It lines the inside of the eyelids and protects the sclera (the white part of the eye). The conjunctiva contains glands that produce secretions that keep the eyes moist as well as antibodies that fight infection. Conjunctivitis is an inflammatory condition of the conjunctiva. In infectious cases, both eyes are usually affected. The most common cause is an infection caused by viruses or bacteria. Because of chemical irritants. Allergies or traditional eye remedies. Important Considerations Effects: The eyes are irritated and red. Make the eyelids adhere to one another. Typically, vision is unaffected.

84. Option (1) is correct.
Akkitham, a renowned Malayalam poet, has received the 55th Jnanpith Award. He received the 55th Jnanpith Award in 2019. Akkitham Achuthan Namboothiri, also known as Akkitham, was born in 1926. Akkitham has written 55 books, 45 of which are poetry collections such as Khanda Kavyas, Katha Kavyas, and Charitha Kavyas. Padma Shri Award (2017), Sahitya Akademi Award (1973), Kerala Sahitya Akademi Award (1972 and 1988), Mathrubhumi Award, Vayalar Award, and Kabir Samman are among his literary honours. Every year, the Bharatiya Jnanpith organization bestows the Jnanpith Award on an Indian writer. It was established in 1961. In 1965, G. Sankara Kurup received the first Jnanpith Award. Shanka Ghosh Bengali 2015 Dr. Raghuvir Chaudhar Gujarati 2016 2018 Krishna Sobti Hindi English Amitav Ghosh 2019 Malayalam Akkitham Achuthan Namboothiri.

85. Option (4) is correct.
Himachal Pradesh is associated with Guler Painting. It's a style of Pahari painting. Kangra paintings are said to have originated in Guler. Guler was derived from the word Gwala, which means cowherd. Phad painting from Rajasthan stands out for its unique history, origin, and efforts to revive it. Saura art is traditionally created

on the homes' red or brown clay walls. Bagh is a small village in Madhya Pradesh on the banks of the Baghni River. These are the wall paintings in Bagh's Buddhist monastery complex, which consists of ten caves.

86. Option (1) is correct.
In 2020-21, ₹ 99,300 crores have been set aside for education, with ₹ 3000 crores set aside for skill development. The budget allocation of the Department of School Education & Literacy has increased by ₹ 3308.37 cr (5.85%). While the total budget was around ₹ 30,42,230 crore, it was 12.7% higher than the revised 2019-20 estimate. The New Education Policy was approved by the Union Cabinet in July 2020. (NEP). This committee was led by former ISRO chief K Kasturirangan. Ramesh Pokhriyal is the current Minister of Education.

87. Option (2) is correct.
Lumbini, Bodh Gaya, Sarnath, Kushinagar, Shravasti, Sankissa Rajgriha, and Vaishali are Ashta Mahasthana associated with the Buddha's life. Gautama Buddha was born in the Shakya Kshatriya clan in the Lumbini village of Kapilavastu, Nepal, in 563 B.C. The event known as Mahabhiniraskramana, or the Great Going Forth, occurred when Gautama Buddha left his home. Buddha went to Vaishali and received Sankhya darshan. He went to Rajgriha to learn yoga, and then to Uruvela to achieve enlightenment. He then proceeded to Sarnath, where he delivered his first sermon, also known as Dharmachakrapravartana. He died near Kushinara in 483 B.C., and the event is known as Mahaparinirvana.

88. Option (1) is correct.
On October 2, 2009, MG was added to NREGA. It went into effect in 200 backward districts on February 2, 2006. MGNREGA is one of the world's largest work guarantee programs. Every rural household whose adult members volunteer to do unskilled manual labor receives at least 100 days of guaranteed wage employment in a fiscal year. It is administered by the Ministry of Rural Development. This ministry's minister is Narendra Singh Tomar. He is also the Minister of Agriculture and Farmer's Welfare, as well as the Minister of Food Processing Industries.

89. Option (3) is correct.
Rutherford's Nuclear Model of the Atom demonstrated that the majority of space in atoms is generally empty. This means that the Nucleus is extremely small in comparison to the overall size of an Atom. The radius of the atom is approximately 10-10 m, while the radius of the nucleus is approximately 10-15 m. So, if a cricket ball represents a nucleus, the radius of an atom is approximately 5 km. The diameter of the cricket ball (nucleus) is 10 cm, as we all know. The size of the nucleus is approximately 10-15 m, while the size of an atom is approximately 10-10 m. For a nucleus size of 10-15 m and an atom size of 10-10 m For 1 m nucleus size (10-10 / 10-15) m atom size. Nucleus size: 100 cm An atom is 105 m in size. A nucleus is 10 cm (Cricket ball) in size and an atom is 104 m in size. 10 cm (Cricket ball) size of a nucleus 10 km (as 1 km = 1000 m) size of an atom However, in this case, the radius is specified in the question. An atom's radius, so radius = Diameter/2 = 10/2 km As a result, the radius of the atom is approximately 5 km.

90. Option (4) is correct.
A fermi meter is a unit of spatial measurement with a length of 10 meters. A fermi meter is represented by the symbol fm. 1 Femto equals 10-15 m. The fermi is named after Enrico Fermi, an Italian physicist who was one of nuclear physics' founding fathers.

91. Option (3) is correct.
There were three main speakers in Parliament's Central Hall. Dr Sarvepalli Radhakrishnan, Jawaharlal Nehru, and Chaudhary Khaliquzaman. The third notable speaker at the official event was Pandit Jawaharlal Nehru. Additional Information In Parliament, Jawahar Lal Nehru delivered his famous "Tryst With Destiny" speech. Jawaharlal Nehru was sworn in as Prime Minister of independent India on August 15, 1947. Vande Mataram was performed as the National Anthem.

92. Option (2) is correct.
Article 21A guarantees the right to an education. The State shall provide free and compulsory education to all children aged six to fourteen years in the manner determined by law. It is covered by India's constitution's Fundamental Rights (Part III). Between Articles 12 and 35, fundamental rights are mentioned. It was taken from the United States Constitution. They are justiciable, which means we can take them to the High Court (Article 226) and the Supreme Court (Article 32) if they are violated. Article 31A - Preservation of laws governing the acquisition of estates, etc. Article 101 - Vacancies in Parliament. Article 74 - The Council of Ministers assists and advises the President. Other important Education Articles include Article 30 - Minorities' right to establish and administer educational institutions. Madarsa, for example. Article 45 states that the state shall provide free and compulsory education to all children until the age of fourteen. The 86th Amendment Act of 2002 amended Article 45 to make elementary education a fundamental right under Article 21 A. The amended directive mandates that the state provide early childhood care and education to all children until they reach the age of six.

93. Option (4) is correct.
Kamet is a Himalayan mountain peak in Uttarakhand state, northern India, near the border with China's Tibet Autonomous Region. It is 25,446 feet (7,756 meters) high and was first climbed in 1931 as part of the Zaskar Range. Nepali Annapurna The Annapurna Himal is a Himalayan massif in north-central Nepal. It forms a ridge about 30 miles (48 kilometers) north of Pokhara between the gorges of the Kali (Kali Gandak; west) and Marsyandi (east) rivers. Mount Everest is part of the Great Himalayas of southern Asia, located at 27°59′ N 86°56′ E on the border between Nepal and the Tibet Autonomous Region of China. The highest mountain in the world, with an elevation of 29,035 feet (8,850 meters). Chomolungma, its most common Tibetan name, means "Goddess Mother of the World" or "Goddess of the Valley." The Sanskrit name Sagarmatha translates as "Heaven's Peak." Everest has the shape of a three-sided pyramid. Lhotse (Tibetan for "South Peak"), also known as E1, is a Himalayan mountain massif on the border of Nepal and China's Tibet Autonomous Region. It has three summits, the highest of which, Lhotse, is the world's fourth-tallest peak at 27,940 feet (8,516 meters). It is sometimes included in the Everest massif. Jordan Romero, 13, became the youngest person to reach the summit of Mount Everest. The Atlas Mountains are located on the African continent.

94. Option (2) is correct.
In 2018, Smriti Mandhana was named ICC Woman Cricketer of the Year and Women's ODI Player of the Year. Mandhana played 51 one-day internationals and scored four centuries. Since her debut in 2013, Mandhana has scored 2025 ODI runs with an average of 43.1, played 75 T20 internationals, and two test matches. In 2019, she received the Arjuna Award. Equitas Small Finance Bank has appointed Smriti Mandhana as its brand ambassador.

95. Option (2) is correct.
The book discusses how to realize Gandhi's dream of making the fruits of development available to every

man, woman, and child. Sarve Jana Sukhino Bhavantu', or happiness for all men, was a long-held dream of our founding fathers. N. R. Narayana Murthy serves on the board of trustees of the Ford Foundation. In 1981, Murthy co-founded Infosys, an international software services firm headquartered in Bangalore, India. He was the company's CEO until 2002 and chairman for the next decade. Shashi Tharoor is a prominent Indian diplomat and politician who joined the Indian government after a long career in the international diplomatic corps. He was also a well-known author of both nonfiction and fiction works. Reasons of State: Political Development and India's Foreign Policy Under Indira Gandhi, 1966-1977 (1982), India: From Midnight to the Millennium (1997), Nehru: the Invention of India (2003), the Elephant, the Tiger, and the Cell Phone: Reflections on India, the Emerging 21st-Century Power (2007), and Pax Indica: India and the World of the 21st Century (2007) were among his most notable nonfiction books (2012). Show Business (1992), which was filmed as Bollywood (1994), and Riot are two of his works of fiction (2001). Ratan Tata, full name Ratan Naval Tata, is an Indian businessman who served as chairman of the Tata Group from 1991 to 2012 and again from 2016-17, Tata oversaw Tata Motors' purchase of the prestigious British car brands Jaguar and Land Rover from Ford Motor Company in 2008. Ratan Tata was awarded the Padma Bhushan, India's highest civilian honor, in 2000. Gurcharan Das is a former CEO of Procter & Gamble India and an author. He is the acclaimed author of a trilogy based on the classical Indian ideal of life's goals. India Unbound was a well-known book.

96. Option (2) is correct.
K D Jadhav was the first Indian athlete from independent India to win an Olympic medal. At the 1952 Helsinki Olympics, Jadhav won a bronze medal in wrestling. In 1920, India sent its first team to the Summer Olympics. In 1928, India won its first gold medal in field hockey (Team event). Abhinav Bindra is the first Indian to win an Olympic gold medal in an individual event. Milkha Singh was a former Indian sprinter. The Flying Sikh is another name for him. In 1959, he was awarded the Padma Shri. PT Usha is a track and field athlete from India. Often called the "queen of Indian track and field". In 1983, he received the Arjuna Award. Karnam Malleshwari is a former weightlifter from India. In 1995, she became the first Indian woman to win an Olympic medal. In 1999, he was awarded the Rajiv Gandhi Khel Ratna.

97. Option (3) is correct.
Bhand Pather is a Kashmiri folk theatre. A bhand pather is a popular form of folk theatre and the word bhand stands for 'jester' while pather means 'drama'. It is only associated with the bhand or folk theatre actor community. The bhands perform twelve different types of bhand pather, and the bhands form a well-organized folk theatre community throughout the valley. Kerala, the majority of Kerala's traditional dances are related to the great Indian epics the Mahabharata and the Ramayana, or the worship of specific Hindu deities. Male actors play both male and female characters in Kathakali, Kerala's classical martial dance-drama. In contrast, Bharata Natyam dancing, which dates back to early Tamil times, is only practiced by women. Dadra and Nagar Haveli's various types of folk and tribal dances include the Tarpa dance, Bhawada dance, Dhol dance, and Tur and Thali dance. Our Lady of Piety's Church The Church of Our Lady of Piety, located directly across from the Tribal Museum, is one of the region's oldest churches.

98. Option (4) is correct.
The Feroze Minar, built in 1530, is half a kilometer away from the Kadam Rasul Mosque. Kadam Rasool translates as Prophet's Footprints. The footprints of Hazrat Muhammad on stone can be found in the mosque. Four black marble towers stand on each of the four corners. The Fateh Khan Tomb, a commander in Aurangzeb's army, is located directly across from the Kadam Rasool Mosque. This intriguing structure was constructed in the Hindu Chala style. Alwar is one of Rajasthan's oldest cities. Moosi Maharani Chhatri is Rani Moosi, reflecting the Indo-Islamic architectural style. Mandu is surrounded by African baobab trees and adorned with spellbinding Afghan architecture. The Jahaz Mahal in Mandu appears to be a ship about to sail as it floats over its reflection. However, for centuries, this stone-and-mortar ship did not. Instead, it sat silently afloat over the twin lakes, bearing witness to Mandu's long, rich, and varied history. Purnia is a Bihar city with a rich Hindu history and a glorious past. Purnea was an outlying military province during Mughal rule.

99. Option (1) is correct.
The Government of India's Ministry of Environment and Forests (MoEF) launched Project Elephant in 1992 to provide financial and technical support to states' wildlife management efforts for their free-roaming populations of wild Asian elephants. The project's goal was to conduct a performance evaluation of the Centrally Sponsored Scheme 'Project Elephant' in Meghalaya's four Wildlife Divisions, namely Khasi Hills Wildlife Division, Jaintia Hills Wildlife Division, East & West Garo Hills Wildlife Division, and Balpakram National Park Division, from 2007-08 to 2011-12.

100. Option (1) is correct.
Gandhara art is a style of Buddhist visual art that flourished between the first and seventh centuries CE in what is now north-western Pakistan and eastern Afghanistan. The Greco-Roman style appears to have flourished largely during the Kushan dynasty and was contemporaneous with an important but dissimilar Kushan art school at Mathura (Uttar Pradesh, India). Many motifs and techniques from classical Roman art were used by the Gandhara school, such as vine scrolls, cherubs bearing garlands, tritons, and centaurs. However, the basic iconography remained Indian. Greece is the southernmost country on the Balkan Peninsula. The Aegean Sea borders Greece on the east, the Mediterranean Sea on the south, and the Ionian Sea on the west. Italy is a country in south-central Europe with a peninsula jutting deep into the Mediterranean Sea. The capital is Rome, one of the world's oldest cities. Hungary, also known as Hungarian Magyarorszag, is a landlocked country in Central Europe. Budapest is the capital. Budapest is located on both sides of the Danube River (Hungarian: Duna). Belgium is a country in northwest Europe. It is one of Europe's smallest and most densely populated countries. Belgium is now one of Europe's most industrialized and urbanized countries. Belgium It is a member of the Benelux economic union, the European Union (EU), and the North Atlantic Treaty Organization (NATO), all of which have their headquarters in or near Brussels.

101. Option (2) is correct.
We will divide the individual numbers by 2, given in product of numbers $1433 \times 1433 \times 1422 \times 1425$.

Remainder $= 1433 \div 12 = 5$

Remainder $= 1422 \div 12 = 6$

Remainder $= 1425 \div 12 = 9$

Remainder $= (1433 \times 1433 \times 1422 \times 1425) \div 12$

$= (5 \times 5 \times 6 \times 9) \div 12 = (1350) \div 12 = 6$

$\therefore$ Required remainder is 6.

102. Option (4) is correct.
First we will find LCM of the given numbers.

2	15,18,36
2	15,9,18
3	15,9,9
3	5,3,3
5	5,1,1
	1,1,1

L.C.M. (15, 18, 36) = $2 \times 2 \times 3 \times 3 \times 5 = 180$
Number will be in the form of $180a + 9$.
Also, number is divisible by 11.
On putting $a = 6$.
$\Rightarrow 180 \times 6 + 9 = 1089$ and 1089 is divisible by 11.
So, required number is 1089.

103. Option (3) is correct.

$$\frac{6.35 \times 6.35 \times 6.35 + 3.65 \times 3.65 \times 3.65}{63.5 \times 63.5 + 36.5 \times 36.5 - 63.5 \times 36.5}$$

Let $6.35 = a$ and $3.65 = b \Rightarrow 63.5 = 10a$ and $36.5 = 10b$
Given expression will become

$$\frac{a \times a \times a + b \times b \times b}{100\left[a \times a + b \times b - a \times b\right]} = \frac{a^3 + b^3}{\left[a^2 + b^2 - ab\right] \times 100}$$

$$= \frac{(a+b)\left(a^2 + b^2 - ab\right)}{\left[a^2 + b^2 - ab\right] \times 100} = (a + b)/100$$

$$= (6.35 + 3.65)/100 = \frac{10}{100} = 0.1$$

104. Option (2) is correct.
Radius of base of cylinder, $r = 14$ cm
Let height of the cylinder = h cm
$\therefore$ Curved surface area of cylinder = $2\pi rh$
According to question

$$2\pi rh = 880$$

$$\Rightarrow 2 \times \frac{22}{7} \times 14 \times h = 880$$

$$\Rightarrow \quad 88h = 880 \Rightarrow h = \frac{880}{88} = 10$$

Volume of cylinder = $\pi r^2 h$

$$= \frac{22}{7} \times 14 \times 14 \times 10 = 22 \times 2 \times 14 \times 10 = 6160 \text{ cm}^3$$

105. Option (2) is correct.

$$4[\text{cosec}^2 57° - \tan^2 33°] - \cos 90° - y \tan^2 66° \tan^2 24° = \frac{y}{2}$$

$$\Rightarrow 4[\text{cosec}^2 (90° - 33°) - \tan^2 33°] - \cos 90° - y \tan^2 66° \tan^2 (90° - 66°) = \frac{y}{2}$$

$$\Rightarrow 4[\sec^2 33° - \tan^2 33°] - 0 - y \tan^2 66° \cot^2 66° = \frac{y}{2}$$

$[\because \text{cosec}(90° - \theta) = \sec\theta \text{ and } \tan(90° - \theta) = \cot\theta \cos 90° = 0]$

$$\Rightarrow 4(1) - y \tan^2 66° \times \frac{1}{\tan^2 66°} = \frac{y}{2}$$

$$\left[\because \cot\theta = \frac{1}{\tan\theta}\right]$$

$$\Rightarrow 4 - y = \frac{y}{2} \Rightarrow 8 - 2y = y \Rightarrow 8 = 3y \Rightarrow y = \frac{8}{3}$$

106. Option (1) is correct.
A takes 15 hours to fill the tank.
B takes 18 hours to fill the tank.
They will fill the part of tank in 1 hour

$$= \frac{1}{15} \times \frac{1}{18} = \frac{6+5}{90} = \frac{11}{90}$$

They will fill the tank simultaneously in $\frac{90}{11}h = 8\frac{2}{11}h$.

107. Option (3) is correct.
Combined annual strawberry and butterscotch % points in 2005 = (18.9 + 10.8)% = 29.7%
Combined annual strawberry and butterscotch % points in 2015 = (20.5 + 16.6)% = 37.1%
Total increase in % point = (37.1 – 29.7)% = 7.4%
$\because$ 1% point results in sales of ₹10000.
$\therefore$ Required sales increase = ₹7.4 × 10000 = ₹74000

108. Option (3) is correct.
Total students of school A over the year = 640 + 800 + 500 + 700 + 900 + 750 = 4290
Total students of school B over the years = 550 + 820 + 600 + 750 + 500 + 480 = 3700

$$\left[\because \text{Average} = \frac{\text{Sum of observations}}{\text{Number of observations}}\right]$$

$$\text{Required ratio} = \frac{4290 \div 6}{3700 \div 6} = \frac{4290}{3700} = \frac{429}{370}$$

109. Option (1) is correct.
A can do the job in 10 days and B can do the same job in 15 days.
Let C can do the same job in 'x' days.
Part of work done by A & B in 2 days

$$= 2\left[\frac{1}{10} + \frac{1}{5}\right] = 2 \times \frac{3}{10} = \frac{3}{5}\text{th}$$

Remaining work is done by A & C in 3 days.

$$\Rightarrow \quad 1 - \frac{3}{5} = 3 \times \left[\frac{1}{10} + \frac{1}{x}\right]$$

$$\Rightarrow \quad \frac{2}{15} = \frac{1}{10} + \frac{1}{x}$$

$$\Rightarrow \quad \frac{1}{x} = \frac{2}{15} - \frac{1}{10} = \frac{4-3}{30} = \frac{1}{30}$$

$\Rightarrow$ C can do job in 30 days.

C can do 60% of job m $\frac{60/100}{1/30}$ days $= \frac{60 \times 30}{100}$ days

= 18 days

110. Option (2) is correct.
The ratio of the ages of A & B, 7 years ago = 4: 5
$\Rightarrow$ Ages of A&B, 7 years ago, respectively $4x$ and $5x$
$\therefore$ Their ages will be

Time	A	B
7 years ago	$4x$	$5x$
At present	$4x + 7$	$5x + 7$
8 years hence	$4x + 15$	$5x + 15$

According to question,

$$\frac{4x+15}{5x+15} = \frac{9}{10}$$

$$\Rightarrow \quad 40x + 150 = 45x + 135 \Rightarrow 15 = 5x \Rightarrow x = 3$$

$\therefore$ sum of their present ages = $4x + 7 + 5x + 7$
$= 9x + 14 = 9 \times 3 + 14 = 27 + 14 = 41$ years

111. Option (1) is correct.

$\because a^2 + b^2 + c^2 + 216 = 12(a + b - 2c)$

$\Rightarrow a^2 + b^2 + c^2 + 216 = 12a + 12b - 24c$

$\Rightarrow a^2 - 12a + 36 + b^2 - 12b + 36 + c^2 + 24c + 144 = 0$

$\Rightarrow (a-6)^2 + (b-6)^2 + (c+12)^2 = 0$

$\because [A^2 + 2AB + B^2 = (A+B)^2]$

$\Rightarrow a = 6, b = 6$ and $c = -12$

Now, $\sqrt{ab - bc + ca}$

$= \sqrt{6 \times 6 - 6 \times (-12) + (-12) \times 6}$

$= \sqrt{36 + 72 - 72} = \sqrt{36} = 6$

112. Option (1) is correct.

Let B's salary = 100 units

$\Rightarrow$ A's salary = 160 units

B's salary less than of A = 60 units

$$\text{So, required } \% = \frac{60}{160} \times 100\% = \frac{300}{8}\% = 37.5\%$$

113. Option (1) is correct.

Investment made by A = ₹13750

Investment made by B = ₹16250

Investment made by C = ₹18750

Ratio of their investment = 13750:16250:18750 = 11:13:15

Let the total ratio be ₹x

$$\text{B's share} = \frac{13}{(11+13+15)} \times x = \frac{13x}{39} = \frac{x}{3}$$

According to question $\frac{x}{3} = 5200$

$\Rightarrow x = 15600$

$\therefore$ Total profit earned by them = ₹15600

114. Option (2) is correct.

We know that, successive discount of a % & b%

$$= \left[a + b - \frac{ab}{100}\right]\%$$

Successive discount of 22% & 17%

$$= \left[22 + 17 - \frac{22 \times 17}{100}\right]\% = 35.26\%$$

Successive discount of 35.26% & 11%

$$= \left[35.26 + 11 - \frac{35.26 \times 11}{100}\right] = 42.38\% \approx 42\%$$

115. Option (1) is correct.

Total student is school A & B in 2008 = 640 + 550 = 1190

Total students in school A & B in 2009 = 800 + 820 = 1620

Total students in school A & B in 2010 = 500 + 600 = 1100

Total students in school A & B in 2011 = 700 + 750 = 1450

Total students in school A & B in 2012 = 900 + 500 = 1450

Total students in school A & B in 2013 = 750 + 480 = 1230

Clearly, total students in school A & B is minimum in 2010.

116. Option (1) is correct.

We will use BODMAS to solve the expression.

$$= \frac{40 - \frac{3}{4} \text{ of } 32}{37 - \frac{3}{4} \text{ of } (34-6)} = \frac{40 - \frac{3}{4} \times 32}{37 - \frac{3}{4} \times 28}$$

$$= \frac{40-24}{37-21} = \frac{16}{16} = 1$$

117. Option (1) is correct.

Let weights of A, B and C are a, b, and c respectively.

$\because$ sum of terms = Number of terms $\times$ Average

$\Rightarrow$ Sum of weight of A & B = 63.5 × 2 = 127kg

Sum of weights of A & C = 67.5 × 2 = 135kg

Sum of weight of A, B, and C = 65 × 3 = 195 kg

Now, $a + b = 127$ ...(i)

$a + c = 135$ ...(ii)

$a + b + c = 195$ ...(iii)

Subtract equation (iii) from sum of (i) & (ii)

$a + b + a + c - (a + b + c) = 127 + 135 - 195$

$\Rightarrow a + b + a + c - a - b - c = 262 - 195$

$\Rightarrow a = 67$

$\therefore$ Weight of A = 67 kg

118. Option (3) is correct.

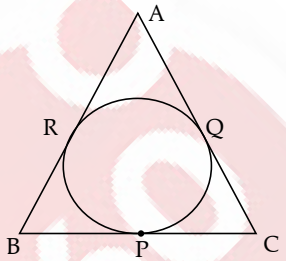
Number of students in class interval 170 – 175 = 12

Number of students in class interval 165 – 170 = 14

$$\text{Required percentage} = \frac{14-12}{14} \times 100\% = \frac{200}{14}\%$$

$$= \frac{100}{7}\% = 14.3\%$$

119. Option (4) is correct.



Given that, AQ = 3.5 cm

PC = 4.5 cm

BR = 7 cm

Tangents from external point are equal in lengths.

$\Rightarrow$ AQ = AR = 3.5 cm ...(i)

BP = BR = 7 cm ...(ii)

PC = CQ = 4.5 cm ...(iii)

AC = AQ + CQ = 3.5 + 4.5 = 8 cm

AB = AR + BR = 3.5 + 7 = 10.5 cm

BC = BP + PC = 7 + 4.5 = 11.5 cm [Using (i), (ii) and (iii)]

AB + BC + AC = 8 + 10.5 + 11.5 = 30 cm

$\therefore$ Perimeter of ΔABC = 30 cm

120. Option (1) is correct.

Let length of rectangle = l m

$$\text{Breadth of rectangle} = \frac{2}{3}l \text{ m}$$

$$\text{Perimeter of rectangle} = 2\left[l + \frac{2}{3}l\right] = \frac{10}{3}l \text{ m}$$

Let side of square = a m

$\therefore$ Its perimeter = $4a$ m = 40 m

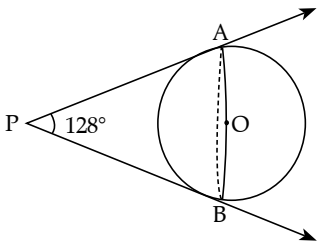
According to question

$$40 = 10\frac{l}{3}$$

$\Rightarrow l = 12$ m

$$\text{Now, area of rectangle} = l \times \frac{2}{3}l = 12 \times \frac{2}{3} \times 12 = 96 \text{ m}^2$$

121. Option (2) is correct.



$\angle APB + \angle AOB = 180°$
[Angle between the tangents and angle between radii from point of contacts are supplementary]
$\Rightarrow 128° + \angle AOB = 180°$
$\Rightarrow \angle AOB = 52°$
In ΔAOB
$\angle OAB + \angle OBA + \angle AOB = 180°$
$\Rightarrow \angle OAB + \angle OBA + 52° = 180°$ [Angle sum property]
$\Rightarrow \angle OAB + \angle OBA = 128°$
$\Rightarrow \angle OAB + \angle OAB = 128°$ [$\because$ OA = OB]
$\Rightarrow 2\angle OAB = 128° \Rightarrow \angle OAB = 64°$

122. Option (3) is correct.
A can fill the tank in 16 hours.
B can fill the tank in 24 hours.
C can empty the tank in 40 hours.
Part of tank all of them together can fill in 1 hour

$$= \frac{1}{16} + \frac{1}{24} - \frac{1}{40}$$

$$= \frac{15 + 10 - 6}{240} = \frac{19}{240}th \text{ part}$$

In 10 hours they can fill the tank

$$= 10 \times \frac{19}{240}th \text{ part} = \frac{19}{24}th \text{ part}$$

Remaining part to be filled by B & C

$$= 1 - \frac{19}{24} = \frac{5}{24}$$

Both will fill the tank in $= \dfrac{\frac{5}{24}}{\frac{1}{24} - \frac{1}{40}}$ h

$$= \frac{\frac{5}{24}}{\frac{5-3}{120}} \text{h}$$

$$= \frac{5}{24} \times \frac{120}{2} = \frac{25}{2}\text{h} = 12\frac{1}{2}\text{h}$$

123. Option (3) is correct.
$4 - 2\sin^2\theta - 5\cos\theta = 0$
$\Rightarrow 4 - 2[1 - \cos^2\theta] - 5\cos\theta = 0$ [$\because \sin^2\theta = 1 - \cos^2\theta$]
$\Rightarrow 4 - 2 + 2\cos^2\theta - 5\cos\theta = 0$
$\Rightarrow 2\cos^2\theta - 5\cos\theta + 2 = 0$
$\Rightarrow 2\cos^2\theta - 4\cos\theta - \cos\theta + 2 = 0$
$\Rightarrow 2\cos\theta[\cos\theta - 2] - 1[\cos\theta - 2] = 0$
$\Rightarrow (\cos\theta - 2)(2\cos\theta - 1) = 0$
$\Rightarrow \cos\theta = 2$ [but $\cos\theta$ can't be 2 as $-1 \le \cos\theta \le 1$]
$\therefore 2\cos\theta - 1 = 0$

$$\cos\theta = \frac{1}{2} \Rightarrow \theta = 60° \qquad \left[\because \cos 60° = \frac{1}{2}\right]$$

Now, $\cos\theta + \tan\theta = \cos 60° + \tan 60°$

$$= \frac{1}{2} + \sqrt{3} = \frac{1 + 2\sqrt{3}}{2}$$

124. Option (2) is correct.
Let the length and breadth of rectangle are 'x' and 'y'.
$\therefore$ its area $= xy$

$$\text{New length} = \frac{100 - 11}{100}x = \frac{89}{100}x$$

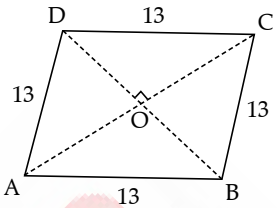
$$\text{New breadth} = \frac{100 - 11}{100}y = \frac{89}{100}x$$

$$\text{New area} = \left(\frac{89}{100}\right)^2 xy = 0.7921\,xy$$

$$\text{Percentage decrease of area} = \frac{(1 - 0.7921)xy}{xy} \times 100$$

$= 20.79\%$
Shortcut:
Percentage change in the area $= x + y - xy/100$
$= 11 + 11 - (11)(11)/100 = 20.79\%$

125. Option (3) is correct.



ABCD is rhombus of side 13 cm.
One diagonal AC = 10 cm
Both diagonal intersect at O.
[$\because$ diagonal of rhombus bisect each other at 90°]

$$AO = OC = \frac{10}{2} = 5 \text{ cm}$$

Also, $\angle AOB = 90°$
Let $DB = 2x$ cm
$\Rightarrow OB = OD = x$ cm
In ΔAOB
$AB^2 = AO^2 + OB^2$ [By Pythagoras theorem]
$13^2 = 5^2 + x^2$
$\Rightarrow 169 = 25 + x^2 \Rightarrow x^2 = 144$
$\Rightarrow x = 12$ cm
$\Rightarrow DB = 2x = 24$ cm

$$\text{Area of ABCD} = \frac{AC \times DB}{2} = \frac{10 \times 24}{2} = 120 \text{ cm}^2$$

126. Option (2) is correct.
Total number of students = 15 + 13 + 10 + 14 + 12 + 6 = 70
Number of students in class interval 160 – 170 = 10 + 14 = 24

$$\text{Required percentage} = \frac{24}{70} \times 100\% = 34.29\% \approx 34\%$$

127. Option (1) is correct.
$x^4 + x^{-4} = 194$

$$\Rightarrow x^4 + \frac{1}{x^4} = 194$$

$$\Rightarrow x^4 + \frac{1}{x^4} + 2 = 194 + 2 = 196$$

$$\Rightarrow \left(x^2 + \frac{1}{x^2}\right) = 196 = 14^2 \left[\because a^2 + \frac{1}{a^2} + 2 = \left(a + \frac{1}{a}\right)^2\right]$$

$$\Rightarrow x^2 + \frac{1}{x^2} = 14 \Rightarrow x^2 + \frac{1}{x^2} + 2 = 14 + 2 = 16$$

$$\Rightarrow \left(x + \frac{1}{x}\right)^2 = 16 \Rightarrow x + \frac{1}{x} = 4$$

128. Option (3) is correct.
Here, Principal sum = ₹12,000
Rate of simple interest = 10%
Time = x years (assume)
Amount = ₹20,400

$\because$ Amount $= p\left[1+\frac{RT}{100}\right]$

$\Rightarrow 20400 = 12000\left[1+\frac{10x}{100}\right]$

$\Rightarrow \quad \frac{204}{120} = 1+\frac{x}{10}$

$\Rightarrow \quad \frac{51}{30}-1 = \frac{x}{10} \Rightarrow \frac{21}{30} = \frac{x}{10}$

$\Rightarrow \quad x = \frac{21\times 10}{30} = 7$

Required time is 7 years

129. Option (4) is correct.

The given number is $785x3678y$

Number is divisible by 72.

= Number is also divisible by 8 & 9.

i.e., sum of digits will be divisible by 9

and last 3 digits will be divisible by 8.

So, $78y$ is divisible by 8

$\Rightarrow y = 4$ ($\because$ 784 is divisible by 8)

Now, sum of digits $= 7+8+5+x+3+6+7+8+y$

$= 44+x+y$

$= 48+x$ [$\because y = 4$]

$\because 48+x$ is divisible by 9

$\Rightarrow x = 6$ [$\because$ 54 is divisible by 9]

Now, $x-y = 6-4 = 2$

130. Option (3) is correct.

Let price of diesel = ₹100

and consumption of diesel = 100 litres

$\therefore$ Total expenditure = ₹100 × 100 = ₹10000

New price of diesel = ₹116 [16% increase]

New expenditure of diesel $= 10000\times\frac{110}{100}$

[10% increase]

= ₹11000

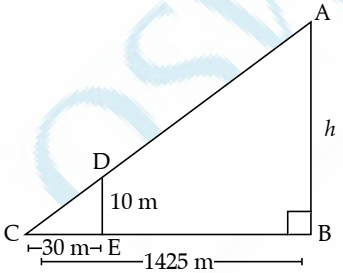
$\therefore$ New consumption of diesel $= \frac{11000}{116}$

= 94.8 litres

$\therefore$ Percentage decrease of diesel

$= \left[\frac{100-94.8}{100}\right]\times 100 = 5.2\%$ (approximately)

131. Option (1) is correct.



AB is height of mall = h (assume)

DE is height of tree = 10 m

CE distance of tree from man = 30 m

CB distance of mall from man = 1425 m

$\Delta ACB \sim \Delta DEC$ [AAA similarity]

$\Rightarrow \quad \frac{AB}{DE} = \frac{BC}{CE}$

$\Rightarrow \quad \frac{h}{10} = \frac{1425}{30} \Rightarrow h = \frac{1425\times 10}{30} = 475$

$\Rightarrow$ Height of the mall is 475 m.

132. Option (2) is correct.

Given that

Average of 12 number = 39

Average of last 5 numbers = 35

Average of first 4 numbers = 40

Let fifth number = x

$\therefore$ sixth number = $x+6$

and seventh number = $x-5$

[Sum of number = Average × Number of those numbers]

According to question

$(12\times 39) = (4\times 40)+(x)+(x+6)+(x-5)$

↓ ↓ ↓ ↓ ↓

Sum of 12 numbers | Sum of first 4 numbers | 5th number | 6th number | 7th number

$+(5\times 35)$

↓

Sum of last 5 numbers

$468 = 160+3x+1+175 \Rightarrow 3x = 132 \Rightarrow x = 44$

Average of 5th and 6th number $= \frac{(44)+(44+6)}{2} = 47$

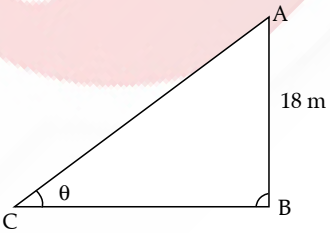
133. Option (1) is correct.

Number students of school A in 2009, 2011, and 2013 = 800 + 700 + 750 = 2250

Number of students in school B in 2008, 2012, and 2013 = 550 + 500 + 480 = 1530

$\therefore$ Required ratio $= \frac{2250}{1530} = \frac{25}{17} = 25:17$

134. Option (2) is correct.



AC → length of ladder

AB → height of ladder from the wall

$\angle ACB = \theta$

Given that $\cos\theta = \frac{5}{13}$

$\because \quad \tan\theta = \frac{\sqrt{1-\cos^2\theta}}{\cos\theta}$

$= \frac{\sqrt{1-\left(\frac{5}{13}\right)^2}}{\frac{5}{13}} = \frac{\sqrt{1-\frac{25}{169}}}{\frac{5}{13}}$

$= \frac{\sqrt{\frac{144}{169}}}{\frac{5}{13}} = \frac{\frac{12}{13}}{\frac{5}{13}} = \frac{12}{5}$

In ΔABC

$\tan\theta = \frac{AB}{BC}$

$$\Rightarrow \quad \frac{12}{5} = \frac{18}{BC} \qquad \left[\because \tan\theta = \frac{12}{5}\right]$$

$$\Rightarrow \quad BC = \frac{18 \times 5}{12} = \frac{15}{2} = 7.5$$

Distance of ladder from the wall = 7.5 m

135. Option (3) is correct.

Let total people were surveyed = x

Number of people were surveyed for other flavours = $\frac{15.7}{100}x$

According to question,

$$\frac{10}{100} \times \frac{15.7}{100}x = 1570$$

$$\Rightarrow \quad \frac{157x}{10000} = 1570$$

$$\Rightarrow \quad x = \frac{1570 \times 10000}{157}$$

$$\Rightarrow \quad x = 100000$$

$\therefore$ Total people were surveyed = 100000

136. Option (3) is correct.

According to the Question,

$$110 \times \frac{(100 - x)}{100} = 50 \times \frac{(100 + x)}{100}$$

$$\Rightarrow 1100 - 11x = 500 + 5x$$

$$\Rightarrow 16x = 600$$

$$\Rightarrow x = 37.5\%$$

So, $x\%$ of $650 = \frac{37.5}{100} \times 650 = 243.75$

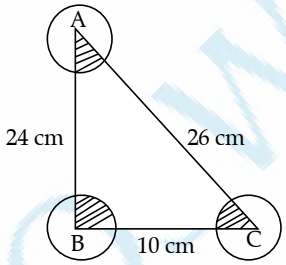
and $(x + 20)\%$ of $180 = \frac{57.5}{100} \times 180 = 103.5$

$\therefore$ Required percentage $= \frac{(243.75 = 103.5)}{103.5} \times 100$

$$= \frac{140.25}{103.5} \times 100$$

$$= 135.5 \simeq 136\%$$

137. Option (3) is correct.



$\because 24^2 + 10^2 = 576 + 100 = 676 = 26^2$

$\Rightarrow \Delta ABC$ is right triangle at B

$\therefore$ Area of $\Delta ABC = \frac{1}{2} \times AB \times BC$

$$= \frac{1}{2} \times 24 \times 10 = 120 \text{ cm}^2$$

The shaded regions form three sectors and area of sector

$$= \frac{\theta}{360^\circ}\pi r^2$$

[$\theta \rightarrow$ angle subtended at centre of circle]

[$r \rightarrow$ radius of circle]

Area of shaded region

$$= \frac{\angle A}{360^\circ}\pi r^2 + \frac{\angle B}{360^\circ}\pi r^2 + \frac{\angle C}{360^\circ}\pi r^2$$

$$= \left[\frac{\angle A}{360^\circ} + \frac{\angle B}{360^\circ} + \frac{\angle C}{360^\circ}\right]\pi r^2$$

$$= \left[\frac{\angle A + \angle B + \angle C}{360^\circ}\right]\pi r^2$$

$$= \frac{180^\circ}{360^\circ} \times \frac{22}{7} \times 4.2 \times 4.2$$

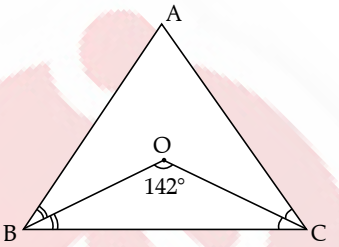
[Therefore $r = 4.2$ cm $\angle A + \angle B + \angle C = 180^\circ$]

$$= \frac{1}{2} \times \frac{22}{7} \times 4.2 \times 4.2 \quad = 27.72 \text{ cm}^2$$

Required area = Area of triangle – Area of shaded region

$$= 120 - 27.72 = 92.28 \text{ cm}^2$$

138. Option (4) is correct.



OB and OC are bisectors of $\angle B$ and $\angle C$ respectively

In ΔBOC

$\Delta BOC + \angle OBC + \angle OCB = 180^\circ$ [Angle sum property]

$\Rightarrow 142^\circ + \angle OBC + \angle OCB = 180^\circ$

$\angle OBC + \angle OCB = 180^\circ - 142^\circ = 38^\circ$

$2[\angle OBC + \angle OCB] = 2 \times 38^\circ = 76^\circ$

$\Rightarrow \angle B + \angle C = 76^\circ$ ...(1)

Now $m\ \Delta ABC$,

$\angle A + \angle B + \angle C = 180^\circ$

$\Rightarrow \angle A = 180^\circ - (\angle B + \angle C)$

$= 180^\circ - 76 = 104^\circ$ [Using eqn. (1)]

139. Option (2) is correct.

Formula for successive discount of $x\%$ & $y\%$

$$= \left[2x - \frac{x^2}{100}\right]\%$$

Marked price of article = ₹920

Single discount of two successive discount = ₹331.20

Successive discount of two $x\% = \left[x + y - \frac{xy}{100}\right]\%$

According to question

$$\left[\frac{100 - (2x - x^2/100)}{100}\right] \times 920 = 331.20$$

$$\Rightarrow 100 - 2x + \frac{x^2}{100} = \frac{33120}{920}$$

$$\Rightarrow \frac{10000 - 200x + x^2}{100} = \frac{3312}{92}$$

$$\Rightarrow 10000 - 200x + x^2 = 3600$$

$$\Rightarrow x^2 - 200x + 6400 = 0$$

$$\Rightarrow x^2 - 180x - 20x + 6400 = 0$$

$$\Rightarrow (x - 180)(x - 20) = 0$$

$\Rightarrow x = 180$ (which is invalid)

$\therefore x$ is 20.

140. Option (2) is correct.
Number of students whose height is between 150 – 155 cm = 15
Number of students whose height is between 175 – 180 = 6
∴ Required difference = 15 – 6 = 9

141. Option (2) is correct.
Let B along can finish job in $2x$ days.
⇒ A along can finish job in x days.
Both can finish the job together in 13 days.
According to question,

$$\frac{1}{x}+\frac{1}{2x}=\frac{1}{13}$$

$$\Rightarrow \quad \frac{3}{2x}=\frac{1}{13} \Rightarrow 2x=39 \Rightarrow x=\frac{39}{2}$$

So, B alone can finish the job in 39 days.

142. Option (3) is correct.
Formula to be used : $a^3-b^3=(a-b)(a^2+b^2+ab)$

$$\frac{\left[\left(5\sqrt{5}x\right)^3-\left(3\sqrt{3}y\right)^3\right]}{\sqrt{5}x-\sqrt{3}y}=\frac{\left[\left(\sqrt{5}x\right)^3-\left(\sqrt{3}y\right)^3\right]}{\sqrt{5}x-\sqrt{3}y}$$

$$=\frac{\left(\sqrt{5}x-\sqrt{3}y\right)\left(\left(\sqrt{5}x\right)^2+\left(\sqrt{3}y\right)^2+\sqrt{5}\cdot\sqrt{3}xy\right)}{\left(\sqrt{5}x-\sqrt{3}y\right)}$$

$$=5x^2+3y^2+\sqrt{15}xy$$

According to question,

$$5x^2+3y^2+\sqrt{15}xy=Ax^2+By^2+Cxy$$

$\Rightarrow A=5, B=3$, and $C=\sqrt{15}$

Now, $3A+B-\sqrt{15}C=3\times5+3-\sqrt{15}\times\sqrt{15}$
$=15+3-15=3$

143. Option (4) is correct.
We will use BODMAS to solve given expression.

$$8-3\div 6 \text{ of } 2+\left(4\div 4 \text{ of } \frac{1}{4}\right)\div 8+\left(4\times 8\div\frac{1}{4}\right)\times\frac{1}{8}$$

$$=8-3\div12+(4\div1)\div8+(4\times32)\times\frac{1}{8}$$

$$=8-\frac{3}{12}+4\div8+128\times\frac{1}{8}$$

$$=8-\frac{1}{4}+\frac{1}{2}+16=\frac{32-1+2+64}{4}=\frac{97}{4}$$

144. Option (1) is correct.
Given that :
$\angle BEA = x°$
$\angle EAC = 46°$
$\angle EBD = 60°$
$BD \perp AC$
In ΔBDC
$\angle BDC + \angle CBD + \angle BCD = 180°$ [Angle sum property]
$\Rightarrow 90° + 60° + \angle BCD = 180°$ [$\because BD \perp AC$]
$\Rightarrow \angle BCD = 30°$
Also, $\angle BCD = \angle ECA = 30°$
In ΔAEC
$\angle EAC + \angle ECA + \angle AEC = 180°$
$\Rightarrow 46° + 30° + \angle AEC = 180°$
$\Rightarrow \angle AEC = 104°$
Now, $\angle BEA + \angle AEC = 180°$ [Linear Pair]
$x° + 104° = 180° \Rightarrow x° = 76°$

145. Option (4) is correct.
Let cost price of article = ₹ x
It was sold at 16% loss

$$\Rightarrow \text{Selling price, S.P.} = \left[\frac{100-16}{100}\right]\times x=\frac{21}{25}x$$

$$\text{New selling price} = \frac{21}{25}x+660$$

At this selling price, he is gaining 8%

$$\Rightarrow \quad \frac{108}{100}x=\frac{21x}{25}+660$$

$$\Rightarrow \quad \frac{27x}{25}-\frac{21x}{25}=660$$

$$\Rightarrow \quad \frac{6x}{25}=660$$

$$\Rightarrow \quad x=110\times25=2750$$

$$\text{Selling price to gain 12\%} = \left[\frac{100+12}{100}\right]\times2750 = ₹\,3080$$

146. Option (1) is correct.
Let the sum invested = ₹ x
and rate of interest = x% per annum

$$\because \quad A=P\left[1+\frac{r}{100}\right]^t$$

A → Amount
P → Principal
r → Rate if interest compounded annually
t → Time period
According to question,

$$\frac{8469.44}{7562}=\frac{P\left[1+\frac{r}{100}\right]^5}{P\left[1+\frac{r}{100}\right]^4}$$

$$\Rightarrow \quad \frac{112}{100}=\left[1+\frac{r}{100}\right] \Rightarrow \frac{112}{100}-1=\frac{r}{100}$$

$$\Rightarrow \quad \frac{12}{100}=\frac{r}{100}$$

$$\Rightarrow \quad r=12$$

So, rate of interest = 12% per annum

147. Option (2) is correct.
Let us assume that speed of A = x km/h

$$\therefore \text{ Time to cover 40 km by A} = \frac{40}{x}\text{h}$$

$$\Rightarrow \text{Time to cover 40 km by B} = \left(\frac{40}{x}-2.5\right)\text{h}$$

New speed of A = $2x$ km/h

$$\text{So, time to cover 40 km by A with new speed} = \frac{40}{2x}\text{h}$$

According to question

$$\left[\frac{40}{x}-2.5\right]-\frac{40}{2x}=1 \Rightarrow \frac{40}{x}-\frac{40}{2x}=3.5$$

$$\Rightarrow \frac{2-1}{2x}=\frac{7}{2\times40} \Rightarrow \frac{1}{x}=\frac{7}{40} \Rightarrow x=\frac{40}{7}$$

$$\text{Time taken by A to cover 40 km} = \frac{40}{40/7}=7\text{h}$$

148. Option (4) is correct.
Two number are in ratio 7 : 11
Their HCF is 28
$\Rightarrow$ Numbers are 7×28 and 11×28 i.e. 196 and 308.
So required difference = 308 – 196 = 112

149. Option (4) is correct.
Let length of train $X = x\ m$
$\Rightarrow$ Length of train $Y = \frac{2}{3}x\ m$
$\therefore$ Sum of their lengths $= x + \frac{2}{3}x = \frac{5x}{3}m$
Their relative speed = (74 + 52)km/h
[Opposite direction]
$= 126\,\text{km/h} = 126 \times \frac{5}{18}\,\text{m/s} = 35\,\text{m/s}$
They takes 12 seconds to cross each other.

$$\Rightarrow \quad \frac{5x/3}{35} = 12$$

$$\Rightarrow \quad \frac{5x}{105} = 12$$

$$\Rightarrow \quad x = \frac{12 \times 105}{5} = 252\ \text{m}$$

So, length of train X = 252 m

150. Option (1) is correct.
Let total sale of all flavours = x
% of sale of vanilla flavour = 16.5%

$$\therefore \quad \frac{16.5}{100}x = 3300$$

$$\Rightarrow \quad x = \frac{330000}{16.5} \qquad \text{...(i)}$$

% of sale of chocolate flavour = 25.8%
Total sale of chocolate flavour $= \frac{25.8}{100} \times x$
$= \frac{25.8}{100} \times \frac{330000}{16.5}$ [Using equation (i)]
= 5160
Total sales of chocolate flavour = ₹5160

151. Option (2) is correct.
This question tests a student's vocabulary. A place where games are played for money is known as 'casino.'

152. Option (2) is correct.
This question tests a student's vocabulary. The incorrectly spelt word is "exprimant". It should be "experiment."

153. Option (2) is correct.
This question tests a student's understanding of phrases and idioms. Little by little means by degrees; gradually. Example: He is recovering little by little.

154. Option (4) is correct.
The sentence intends to show contrast, not reason. Thus, usage of "because" is incorrect. The correct conjunction is "although" in the given context.

155. Option (4) is correct.
This question tests a student's vocabulary. The wrongly spelled word is "ablity". It should be ability.

156. Option (4) is correct.
The blank needs a word that shows condition. The best word to fit in the context is "in case."

157. Option (1) is correct.
This question tests a student's vocabulary. Extreme mental or physical suffering is known as agony. Example: The wounded police officer, who was shot five times, is in agony. Acute means (of an unpleasant or unwelcome situation or phenomenon) present or experienced to a severe or intense degree. Example: "The problem is acute and getting worse." Rapture means a feeling of intense pleasure or joy. Example: "Leonora listened with rapture." Ecstasy means an overwhelming feeling of great happiness or joyful excitement. Example: "They went into ecstasies over the view."

158. Option (4) is correct.
This question tests a student's vocabulary. To be more successful than someone is to outdo someone.

159. Option (3) is correct.
A dry run is most simply defined as practice, rehearsal, or a trial for an event. In many instances, it refers to a practice before a performance, that goes through all of the actions but with one missing element. Example: Let's do a dry run of the commercial again.

160. Option (1) is correct.
This is a third-conditional sentence. The conditional sentence deals with a hypothetical situation that is practically impossible to achieve. The structure of the third condition is: I + Sub + past verb/were + obj + sub + would + 1st form of verb + object. Hence, "had" should be replaced by "were."

161. Option (2) is correct.
The given sentence is grammatically correct, so no change is needed.

162. Option (3) is correct.
The given sentence refers to an act of the past (yesterday). Thus, the simple past tense is required.

163. Option (2) is correct.
One agrees with someone, agrees to a proposal, agrees on price. The preposition used after "agree" is "with" in the given context.

164. Option (2) is correct.
The meaning of "foundation" is "base."

165. Option (3) is correct.
The sentence is talking about a habitual action. This should be expressed in simple present tense. Hence, the usage of present continuous tense is incorrect, it should be in simple present tense (he usually takes his wife).

166. Option (3) is correct.
The paragraph is about the planet on which we live. The correct preposition to fill in the blank of the sentence is "on."

167. Option (1) is correct.
The sentence talks about the earth's movement, so the best word to fill in the blank is speed.

168. Option (4) is correct.
The sentence gives information about the rotation of the earth and goes on to talk about the earth's axis. The best connector to refer to the axis is "which."

169. Option (4) is correct.
The sentence deals with a hypothetical situation of the second condition. The verb used in this condition is "were," irrespective of the number of the subject. Hence, the correct word to fill in the blank is "were."

170. Option (1) is correct.
We need a word that shows a comparison between the two standing positions. To draw comparisons, we use the word "than."

171. Option (4) is correct.
Call on is a phrasal verb, which means pay a visit to someone. Example: "He's planning to call on Katherine today."

172. Option (3) is correct.
The sentence is describing an event that is going on at the time of speaking. We need to use present continuous tense in this situation. Replace "listens to" with "is Listening to." Hence, the error is in the usage of tense.

173. Option (3) is correct.
This question tests your vocabulary. The antonym of warm is cool.

174. Option (3) is correct.
This question tests your understanding of idiomatic expression. Look out is a phrasal verb. It means to be vigilant and take notice. Example: "'Look out!' warned Billie, seeing a movement from the room beyond."

175. Option (4) is correct.
The preposition 'at' is used for expressing a particular state or condition, and the preposition "by" is used for expressing means.

176. Option (4) is correct.
The sentence has an error in the usage of tenses. Though we use the simple present tense for expressing universal facts, in this sentence the author is giving information about a specific event that took place yesterday. And with yesterday, we always use the past tense. Thus, the phrase "rises at 6:35" is incorrect.

177. Option (2) is correct.
The wrongly spelled word is refrence. It should by reference.

178. Option (3) is correct.
The word "fiction" means literature in the form of prose that describes imaginary events and people, or something untrue. Example: "They were supposed to be keeping up the fiction that they were happily married." The synonym for fiction is fantasy.

179. Option (1) is correct.
The sentence uses "now," which makes it clear that the act is in the present tense. Hence, the correct verb is "smell."

180. Option (3) is correct.
The sentence is grammatically correct, so no change is required.

181. Option (3) is correct.
The sentence refers to the action that is taking place at the time of speaking. To express the action that is taking place at the time of speaking, the present continuous tense is used. So, the correct verb in this context is "is talking."

182. Option (2) is correct.
This question tests a student's vocabulary. Fertile is capable of producing abundant vegetation or crops. Example: "Conditions at the time provided fertile ground for revolutionary movements." The antonym of fertile is barren.

183. Option (4) is correct.
Something done because one wants to, not by force, is known as voluntary.

184. Option (3) is correct.
The wrongly spelled word is presure. It should be pressure.

185. Option (2) is correct.
This question tests a student's vocabulary. The antonym of flaw is perfection.

186. Option (1) is correct.
This question tests a student's vocabulary. Feeble means weak. Example: At length, she became too feeble to leave her bed. The antonym of feeble is strong. A foible is a minor weakness or eccentricity in someone's character. Example: "They have to tolerate each other's little foibles."

187. Option (4) is correct.
This question tests a student's vocabulary. Alive means living. The antonym of alive is dead.

188. Option (2) is correct.
This question tests a student's vocabulary. Accurate means correct, exact. Example: "Accurate information about the illness is essential."

189. Option (3) is correct.
This question tests a student's vocabulary. A replica is defined as an exact or very close copy (of something). Artificial means made by people, often as a copy of something natural. Substitute means replacement of something. Forgery means the action of making a copy or imitation of a document, signature, banknote, or work of art.

190. Option (1) is correct.
The sentence mentions a habitual action, which is of zero condition. Habitual actions are expressed in the simple present tense. Thus, usage of the present continuous tense is wrong. Replace "is taking" with "takes."

191. Option (1) is correct.
This question tests a student's understanding of idioms and phrases. To give a hand means to assist someone, or to help someone. Example: I hope that someone will give me a hand—there's no way I'll make it to the fifth floor with all these bags on my own!

192. Option (4) is correct.
This question tests a student's vocabulary. The wrongly spelled word is optsion. It should be option.

193. Option (3) is correct.
The question is grammatically incorrect. "Hear" is not used in progressive form. Thus, the error is in part "I am hearing."

194. Option (3) is correct.
This question tests a student's vocabulary. Imitation means not genuine, a thing intended to simulate or copy something else.
Example: The imitation hardly matches up to the original. The synonym of imitation is fake.

195. Option (4) is correct.
This question tests a student's vocabulary. Just means based on or behaving according to what is morally right and fair. Example: "A just and democratic society is everybody's dream."

196. Option (1) is correct.
Refer to the lines: Most animals are put in an artificial environment (e.g., cages). This isolation from their natural habitat can amount to cruelty.

197. Option (2) is correct.
From the last line, it is clear that our aim should be to conserve animals in the wild, in protected areas called sanctuaries.

198. Option (2) is correct.
From the lines, "In some zoos, we see concrete floors for burrowing animals like rabbits," we can understand that the author is referring to rabbits' characteristic of digging the earth.

199. Option (3) is correct.
From the first line of the passage, option (3) can be easily deduced.

200. Option (3) is correct.
From the line, "Big predators like lions and tigers are created to chase and hunt," we can understand that predators refer to animals that kill other animals for their food.

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