Section 2
Quantitative Aptitude

Directions (Q. 76–80) *What will come in place of the question mark (?) in the following questions?*

76. $\sqrt{360 - 225 \times 2 + 379} = ?$
   - (1) 17
   - (2) 19
   - (3) $\sqrt{279}$
   - (4) 289
   - (5) None of these

77. $9^3 \times 81^2 \div 27^3 = (3)^?$
   - (1) 3
   - (2) 4
   - (3) 5
   - (4) 6
   - (5) None of these

78. $572 \div 26 \times 12 - 200 = (2)^?$
   - (1) 5
   - (2) 6
   - (3) 8
   - (4) 7
   - (5) None of these

79. $4\dfrac{1}{2} - 2\dfrac{5}{6} = ? - 1\dfrac{7}{12}$
   - (1) $3\dfrac{1}{4}$
   - (2) $3\dfrac{5}{12}$
   - (3) $2\dfrac{7}{12}$
   - (4) $3\dfrac{3}{4}$
   - (5) None of these

80. 36% of 245 – 40% of 210 = 10 – ?
   - (1) 4.2
   - (2) 6.8
   - (3) 4.9
   - (4) 5.6
   - (5) None of these

81. Rita invested 25% more than Sunil. Sunil invested 30% less than Abhinav who invested ₹ 6000. What is the respective ratio between the amount that Rita invested and the total amount invested by all of them together?
   - (1) 35 : 104
   - (2) 13 : 29
   - (3) 101 : 36
   - (4) 35 : 103
   - (5) None of these

82. A man gets a simple interest of ₹ 1000 on a certain principal at the rate of 5% per annum in 4 yr. What compound interest will the man get on twice the principal in two years at the same rate?
   - (1) ₹ 1050
   - (2) ₹ 1005
   - (3) ₹ 11025
   - (4) ₹ 10125
   - (5) None of these

83. The perimeter of a square is equal to twice the perimeter of a rectangle of length 8 cm and breadth 7 cm. What is the circumference of a semicircle whose diameter is equal to the side of the square? (Rounded off to the two decimal place)
   - (1) 38.57 cm
   - (2) 23.57 cm
   - (3) 42.46 cm
   - (4) 47.47 cm
   - (5) None of these

84. Radha's present age is three years less than twice her age 12 years ago. Also the respective ratio between Raj's present age and Radha's present age is 4 : 9. What will be Raj's age after 5 years?
   - (1) 12 yr
   - (2) 7 yr
   - (3) 21 yr
   - (4) Cannot be determined
   - (5) None of these

85. The respective ratio between the speeds of a car, a train and a bus is 5 : 9 : 4. The average speed of the car, the bus and the train is 72 km/h together. What is the average speed of the car and the train together?
   - (1) 82 km/h
   - (2) 78 km/h
   - (3) 84 km/h
   - (4) Cannot be determined
   - (5) None of these

Directions (Q. 86–90) *In the following number series only one is wrong number. Find out the wrong number.*

86. 32 34 37 46 62 87 123
   - (1) 34
   - (2) 37
   - (3) 62
   - (4) 87
   - (5) 46

87. 7 18 40 106 183 282 403
   - (1) 18
   - (2) 282
   - (3) 40
   - (4) 106
   - (5) 183

88. 850 843 829 808 788 745 703
(1) 843   (2) 829
(3) 808   (4) 788
(5) 745

89. 33 321 465 537 573 590 600
(1) 321   (2) 465
(3) 573   (4) 537
(5) 590

90. 37 47 52 67 87 112 142
(1) 47   (2) 52
(3) 67   (4) 87
(5) 112

Directions (Q. 91–95) *In the following questions two equations numbered I and II are given. You have to solve both the equations and-*
Give answer, if
(1) $x > y$
(2) $x \geq y$
(3) $x < y$
(4) $x \leq y$
(5) $x = y$ or the relationship cannot be established

91. I. $x^2 - x - 12 = 0$
II. $y^2 + 5y + 6 = 0$

92. I. $x^2 - 8x + 15 = 0$
II. $y^2 - 3y + 2 = 0$

93. I. $x^2 - 32 = 112$
II. $y - \sqrt{169} = 0$

94. I. $x - \sqrt{121} = 0$
II. $y^2 - 121 = 0$

95. I. $x^2 - 16 = 0$
II. $y^2 - 9y + 20 = 0$

Directions (Q. 96–100) *Study the following table carefully and answer the questions given follow :*

Monthly Expenditure (in thousands) by five people on Rent, Food, Children's Education, Clothes and Travelling

Expenditure / People	Rent	Food	Children's Education	Clothes	Travelling
A	12.5	7.50	6.52	3.30	4.72
B	16.0	8.55	8.38	2.75	5.86
C	13.8	11.40	12.60	6.30	9.30
D	9.65	17.80	9.95	8.40	7.85
E	14.5	9.00	10.25	3.90	5.42

96. What is the total monthly expenditure made by D on rent, B on clothes and E on travelling together ?
(1) ₹ 18720   (2) ₹ 178200
(3) ₹ 17800   (4) ₹ 184720
(5) None of these

97. What is the average monthly expenditure on food by all the people together ?
(1) ₹ 108500   (2) ₹ 10850
(3) ₹ 54250   (4) ₹ 52450
(5) None of these

98. Whose monthly expenditure on all the heads together is the lowest among them ?
(1) A   (2) B
(3) C   (4) D
(5) E

99. If the monthly expenditure of C on children's education is increased by 5%, then what will be his yearly expenditure on children's education ?
(1) ₹ 158760
(2) ₹ 1587600
(3) ₹ 13230
(4) ₹ 132300
(5) None of the above

100. What is the respective ratio between the monthly expenditure made by A on travelling and the monthly expenditure made by D on clothes ?
(1) 57 : 105   (2) 105 : 59
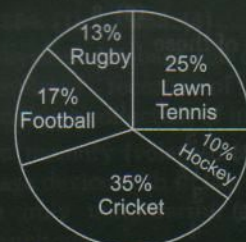(3) 37 : 103   (4) 59 : 105
(5) None of these

Directions (Q. 101–105) *Study the following Pie-chart carefully to answer these questions.*

Percentagewise Distribution of Players Who Play Five Different Sports
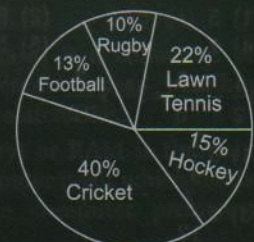
Total players are 4200 out of which Female players are equal to 2000

Total players = 4200   Female players = 2000

Percentage of players who play different sports: 13% Rugby, 17% Football, 25% Lawn Tennis, 10% Hockey, 35% Cricket

Percentage of female players who play different sports: 10% Rugby, 13% Football, 22% Lawn Tennis, 15% Hockey, 40% Cricket

101. What is the average number of players (both male and female) who play football and rugby together ?
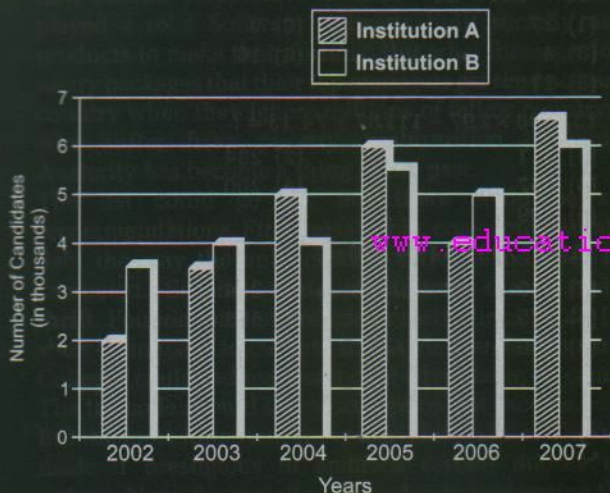(1) 620   (2) 357
(3) 230   (4) 630
(5) None of these

102. What is the difference between the number of the female players who play lawn tennis and the number of male players who play rugby ?
(1) 94   (2) 84
(3) 220   (4) 240
(5) None of these

103. What is the respective ratio of the number of female players who play cricket and number of male players who play hockey ?
(1) 20 : 7   (2) 4 : 21   (3) 20 : 3
(4) 3 : 20   (5) None of these

104. What is the total number of male players who play football, cricket and lawn tennis together ?
(1) 1724   (2) 1734
(3) 1824   (4) 1964
(5) None of these

105. Number of male players who play rugby is approximately what percentage of the total number of players who play lawn tennis ?
(1) 33   (2) 39   (3) 26
(4) 21   (5) 43

Directions (Q. 106–110) *Study the graph and answer the questions that follow.*

Number of Candidates (in thousands) Qualified in the Written Test for Admission to Two Different Institutions

106. What was the respective ratio between the number of candidates qualified in the written test in the year 2002 for admission in institution B and the number of candidates qualified in the written test in the year 2006 for admission to institution A ?
(1) 8 : 5   (2) 7 : 4
(3) 7 : 8   (4) 7 : 5
(5) 8 : 7

107. What was the approximate average number of candidates qualified in the written test for admission to Institution B overall the year ?
(1) 4555   (2) 4200
(3) 4160   (4) 4888
(5) 4667

108. In which year was the total number of candidates qualified in the written test for admission to both the institutions together the second highest ?
(1) 2003   (2) 2004
(3) 2005   (4) 2006
(5) 2007

109. What is the difference between the total number of candidates qualified in written test in year 2006 for admission to institution A and B together and the number of candidates qualified in written test in year 2003 for admission to institution A ?
(1) 5000   (2) 3500
(3) 1500   (4) 5500
(5) None of these

110. What was the total number of candidates qualified in the written test for admission to institution A over all the years together ?
(1) 27000   (2) 26500
(3) 26000   (4) 27500
(5) None of these

Directions (Q. 111–115) *Study the information carefully to answer the questions that follow.*

There are two companies A and B. Both companies produce all the four different products viz,. Computers, Phones, Pen drives and Compact Discs (CDs). Company A produces a total of 800 products. The respective ratio between the total products produced by Company A and Company B is 4 : 5. 20% of the total products produced by Company B are Pen drives and 40% of them are CDs. Two-fifth of the remaining products produced by Company B are Phones. The total number of Computers produced by both the companies together is 340. 20% of the total products produced by Company A are CDs. Company A produces equal number of Pen drives and Phones.

111. What is the respective ratio between the number of Pen drives produced by Company A and the number of Computers produced by Company B ?
(1) 8 : 9   (2) 9 : 7
(3) 7 : 9   (4) 4 : 9
(5) None of these

112. What is the total number of Phones produced by both the companies together ?
(1) 430   (2) 420
(3) 390   (4) 530
(5) None of these

113. Number of Phones produced by Company A is what percentage of the total number of products produced by Company B ?
(1) 25   (2) 29
(3) 33   (4) 37
(5) None of these

114. What is the average of the number of Pen drives, CDs and Computers produced by Company B ?
(1) 840   (2) 280
(3) 270   (4) 860
(5) None of these

115. What is the difference between the number of CDs produced by Company B and the number of Computers produced by Company A ?
(1) 200   (2) 250
(3) 300   (4) 350
(5) None of these

116. The sum of three consecutive odd numbers and three consecutive even numbers together is 231. Also, the smallest odd number is 11 less than the smallest even number. What is the sum of the largest odd number and the largest even number ?

(1) 82
(2) 83
(3) 74
(4) Cannot be determined
(5) None of the above

117. Two-third of the first number is equal to the cube of the second number. If the second number is equal to twelve per cent of 50. What is the sum of the first and the second numbers ?

(1) 330
(2) 360
(3) 390
(4) 372
(5) None of these

118. Rajni purchased a mobile phone and a refrigerator for ₹ 12000 and ₹ 10000 respectively. She sold the refrigerator at a loss of 12 per cent and mobile phone at a profit of 8 per cent. What is her overall loss/profit ?

(1) Loss of ₹ 280
(2) Profit of ₹ 2160
(3) Loss of ₹ 240
(4) Profit of ₹ 2060
(5) None of the above

119. The average age of seven boys sitting in a row facing North is 26 yr. If the average age of first three boys is 19 yr and the average age of last three boys is 32 yr. What is the age of the boy who is sitting in middle of the row ?

(1) 28 yr
(2) 29 yr
(3) 24 yr
(4) 31 yr
(5) None of these

120. The perimeter of a square is double the perimeter of a rectangle. The area of the rectangle is 240 sq cm. What is the area of the square ?

(1) 100 sq cm
(2) 36 sq cm
(3) 81 sq cm
(4) Cannot be determined
(5) None of the above

Directions (Q. 121–125) *What **approximate** value should come in place of the question mark (?) in the following questions ? (You are not expected to calculate the exact value.)*

121. $\sqrt{8938} \times (5.96)^2 = ?$

(1) 3050
(2) 3780
(3) 2340
(4) 3400
(5) 3950

122. $4734.96 - 3454.03 - 1612.96 = ? - 1611.43$

(1) 1280
(2) 2290
(3) 1020
(4) 18150
(5) 1040

123. $\dfrac{323}{55} \times \dfrac{971}{251} \times \dfrac{56}{61} = ?$

(1) 27
(2) 9
(3) 4
(4) 16
(5) 21

124. $133.008 \times 2.97 - 111.87 + 74.13 = ?$

(1) 311
(2) 234
(3) 357
(4) 290
(5) 399

125. $32.1 \times 2799 \div 549 + 120 = ?$

(1) 220
(2) 284
(3) 375
(4) 505
(5) 190