

## Part - C Quantitative Aptitude

101. Ratio of the principle and the amount after 1 year is $10: 12$. Then the ratio of interest per annum is:
(a) $12 \%$
(b) $16 \%$
(c) $18 \%$
(d) $20 \%$
102. A solid cone of height 9 cm with diameter of its base 18 cm is cut out from a wooden solid sphere of radius 9 cm . The percentage of wood wasted is
(a) 25
(b) 30
(c) 50
(d) 75
103. The length of the chord of a circle is 8 cm and perpendicular distance between centre and the chord is 3 cm . Then the radius of the circle is equal to
(a) 4 cm
(b) 5 cm
(c) 6 cm
(d) 8 cm
104. In $\triangle \mathrm{ABC}, \angle \mathrm{BAC}=90^{\circ}$ and $\mathrm{AB}=\frac{1}{2} \mathrm{BC}$.

Then the measure of $\angle A B C$ is:

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(a) $60^{\circ}$
(b) $30^{\circ}$
(c) $45^{\circ}$
(d) $15^{\circ}$
105. The average of 5 numbers is 140 . If one number is excluded, the average of the remaining 4 numbers is 130 . The excluded number is:
(a) 135
(b) 134
(c) 180
(d) 150
106. If toys are bought at Rs. 5 each and sold at Rs.4.50 each, then the loss is
(a) $10 \%$
(b) $11 \%$
(c) $12 \%$
(d) $13 \%$
107. What is the largest number which will divide 110 and 128 leaving a remainder 2 in each case?
(a) 8
(b) 18
(c) 28
(d) 38
108. If $\mathrm{a}=23$ and $\mathrm{b}=-29$, then the value of $25 a^{2}+40 a b+16 b^{2}$ is:
(a) 1
(b) -1
(c) 0
(d) 2
109. If $\left(2^{x}\right)\left(2^{y}\right)=8$ and $\left(9^{x}\right)\left(3^{y}\right)=81$, then $(x, y)$ is:
(a) $(1,2)$
(b) $(2,1)$
(c) $(1,1)$
(d) $(2,2)$
110. One chord of a article is known to be 10.1 cm . The radius of this circle must be:
(a) 5 cm
(b) greater than 5 cm
(c) greater than or equal to 5 cm
(d) less than 5 cm
111. Both the end digits of a 99 digit number N
are $2 . \mathrm{N}$ is divisible by 11 , then all the middle digits are
(a) 1
(b) 2
(c) 3
(d) 4
112. If $0<x<\frac{\pi}{2}$ and $\sec x=\operatorname{cosec} y$, then the value of $\sin (x+y)$ is
(a) 0
(b) 1
(c) $1 / 2$
(d) $1 / \sqrt{3}$
113. A solid wooden toy is in the shape of a right circular cone mounted on a hemisphere. If the radius of the hemisphere is 4.2 cm and the total height of the toys is 10.2 cm , find the volume of the wooden toy (nearly).
(a) $104 \mathrm{~cm}^{3}$
(b) $162 \mathrm{~cm}^{3}$
(c) $427 \mathrm{~cm}^{3}$
(d) $266 \mathrm{~cm}^{3}$
114. A can do a piece of work in 12 days. B is $50 \%$ more efficient than $A$. In how many days B will finish the same work?
(a) 6 days
(b) 8 days
(c) 12 days
(d) 24 days
115. Each interior angle of a regular polygon is there times its exterior angle, then the number of sides of the regular polygon is:
(a) 9
(b) 8
(c) 10
(d) 7
116. Selling an article at a profit of $5 \%$, Mr. X gets Rs. 150 more than selling it at a loss of $5 \%$. Mr. X purchased the article at
(a) Rs. 15,000
(b) Rs 1500
(c) Rs. 150
(d) Rs. 15

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117. The ratio of the radii of two circles is $1: 2$, then the ratio of their area is:
(a) $1: 2$
(b) $2: 1$
(c) $1: 4$
(d) $4: 5$
118. The true discount on a sum of money due 2 years hence at $5 \%$ is Rs. 15. Find the sum.
(a) 150
(b) 165
(c) 170
(d) 160
119. The average weight of 5 persons sitting in a boat is 38 kg . The average weight of the boat and the persons sitting in the boat is 52 kg . What is the weight of the boat?
(a) 228 kg
(b) 122 kg
(c) 232 kg
(d) 242 kg
120. The value of the expression $X^{4}-17 x^{3}+17 x^{2}-17 x+17$ at $x=16$ is
(a) 0
(b) 1
(c) 2
(d) 3
121. In a cylindrical vessel of diameter 24 cm filled up with sufficient quantity of water, a solid spherical ball of radius 6 cm is completely immersed. Then the increase in height of water level is:
(a) 1.5 cm
(b) 2 cm
(c) 3 cm
(d) 4.2 cm
122. If $\mathrm{x}-\frac{1}{x}=5$, the $\mathrm{x}^{2}+\frac{1}{x^{2}}$ is:
(a) 5
(b) 25
(c) 27
(d) 23
123. Each side of an equilateral triangle is 6 cm . Find its area.
(a) $9 \sqrt{3}$ sq. cm
(b) $6 \sqrt{3}$ sq.cm
(c) $4 \sqrt{3} \mathrm{sq} . \mathrm{cm}$
(d) $8 \sqrt{3}$ sq.cm
124. If $\sin 17^{\circ}=\frac{x}{y}$, then the value of $\sec 17^{\circ}-$ $\sin 73$ is:
(a) $\frac{y^{2}-x^{2}}{x y}$
(b) $\frac{x^{2}}{\sqrt{y^{2}-x^{2}}}$
(c) $\frac{x^{2}}{y \sqrt{y^{2}-x^{2}}}$
(d) $\frac{x^{2}}{y \sqrt{y^{2}-x^{2}}}$
125. The distance between Howrah and New Delhi via Patna is 1440 km , and the distance between Howrah and New Delhi via Gaya is $5 \%$ less. Then the distance between the places via Gaya (in kms) is
(a) 1398
(b) 1368
(c) 1388
(d) 1268
126. The value of $\tan 1^{\circ} \tan 2^{\circ}$ and $\tan 3^{\circ} \ldots \ldots$. Tan $89^{\circ}$ is
(a) 1
(b) 0
(c) $\sqrt{3}$
(d) $\frac{1}{\sqrt{3}}$
127. $0 . \overline{123}$ is equal to
(a) $\frac{14}{333}$
(b) $\frac{41}{333}$
(c) $\frac{123}{1000}$
(d) $\frac{441}{333}$
128. ABCD is a cyclic parallelogram. The

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angle $\angle \mathrm{B}$ is equal to:
(a) $30^{\circ}$
(b) $60^{\circ}$
(c) $45^{\circ}$
(d) $90^{\circ}$
129. Ravi travels 300 km partly by train and partly by car. He takes 4 hr. to reach, if he travels 60 km by train and rest by car. He will take 10 minutes more if he were to travel 100 km by train and rest by a car. The speed of the train is:
(a) $50 \mathrm{~km} / \mathrm{hr}$
(b) $60 \mathrm{~km} / \mathrm{hr}$
(c) $100 \mathrm{~km} / \mathrm{hr}$
(d) $120 \mathrm{~km} / \mathrm{hr}$
130. The angles of elevation of the top of a tower from two points A and B lying on the horizontal through the foot of the tower are respectively $15^{\circ}$ and $30^{\circ}$. If A and B are on the same side of the tower and AB $=48$ metre, then the height of the tower is
(a) $24 \sqrt{3}$ metre
(b) 24 metre
(c) $24 \sqrt{2}$ metre
(d) 96 metre
131. If $\mathrm{A}: \mathrm{B}$ is $2: 3, \mathrm{~B}: \mathrm{C}$ is $6: 11$, then the A : $\mathrm{B}: \mathrm{C}$ is
(a) $2: 3: 11$
(b) $4: 6: 22$
(c) $4: 6: 11$
(d) $2: 6: 11$
132. The allowances of an employee constitute $165 \%$ of his basic pay. If he receives Rs. 11925 as gross salary, then his basic pay is (in Rs.)
(a) 4000
(b) 5000
(c) 4500
(d) 5500
133. A cistern is normally filled in 8 hours but takes another 2 hours longer to fill because of a leak in its bottom. If the cistern is full, the leak will empty it in:
(a) 16 hours
(b) 20 hours
(c) 25 hours
(d) 40 hours
134. The product of two numbers is 36 and their sum is 13 . The positive difference between the two numbers is
(a) 1
(b) 3
(c) 5
(d) 9
135. The equal circles of radius 4 cm interest each other such that each passes through the centre of the other. The length of the common chord is
(a) $2 \sqrt{3} \mathrm{~cm}$
(b) $4 \sqrt{3} \mathrm{~cm}$
(c) $2 \sqrt{2} \mathrm{~cm}$
(d) 8 cm
136. From four corners of a square sheet of side 4 cm , four pieces, each in the shape of arc of a circle with radius 2 cm , are cut out. The area of the remaining portion is:
(a) $(8-\pi) \mathrm{sq} . \mathrm{cm}$.
(b) $(16-4 \pi) \mathrm{sq} . \mathrm{cm}$.
(c) $(16-8 \pi) \mathrm{sq} . \mathrm{cm}$.
(d) $(4-2 \pi) \mathrm{sq} . \mathrm{cm}$.
137. If, $\mathrm{A}, \mathrm{B}$ and C be the angles of a triangle, then of the following the incorrect relation is:
(a) $\sin \frac{\mathrm{A}+\mathrm{AB}}{2}=\cos \frac{\mathrm{c}}{2}$
(b) $\cos \left(\frac{\mathrm{A}+\mathrm{B}}{2}\right)=\sin \frac{\mathrm{c}}{2}$
(c) $\tan \left(\frac{\mathrm{A}+\mathrm{B}}{2}\right)=\sec \frac{\mathrm{c}}{2}$

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(d) $\cot \left(\frac{\mathrm{A}+\mathrm{B}}{2}\right)=\tan \frac{\mathrm{c}}{2}$
138. If two-third of A is four-fifth of B , then
$\mathrm{A}: \mathrm{B}=$ ?
(a) $5: 6$
(b) $6: 5$
(c) $10: 9$
(d) $9: 10$
139. The lines $2 x+y=5$ and $x+2 y=4$ interest at the point
(a) $(1,2)$
(b) $(2,1)$
(c) $5 / 2,0$ )
(d) $(0,2)$
140. If $x=3+2 \sqrt{2}$, then the value of $\left(\sqrt{x}-\frac{1}{\sqrt{x}}\right)$ is
(a) 1
(b) 2
(c) $2 \sqrt{2}$
(d) $3 \sqrt{3}$
141. Two successive discounts of $5 \%, 10 \%$ are given for an article costing Rs. 850/-. Present cost of the article is (in Rs.)
(a) 725
(b) 726.25
(c) 700
(d) 650

A motorist and a scooterist made a journey of 120 km at the same time and form the same place. The graph shows the progress of the journey made by each person. Study the graph and answer the question 142 to 145.

142. How far, from the start, did the motorist meet the scooterist? (in km)
143. What was the speed of the scooterist
(a) 75
(b) 70
(c) 90
(d) 80
(a) 45
(b) 48
(c) 42
(d) 46

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144. The scooterist completes the journey in (hrs).
(a) 3
(b) 2
(c) $2 \frac{1}{2}$
(d) $3 \frac{1}{2}$
145. At part time did the motorist meet the scooterist?
(a) 10.30 am
(b) 10.45 am
(c) 10.15 am
(d) 10.20 am
$\overline{\text { Read the bar graph given below and answer }}$ questions 146 to 150 .

146. Which of the above States is the largest producer of rice?
(a) U.P
(b) W.B
(c) M.P
(d) Haryana
147. Which of the above State is the largest producer of wheat?
(a) M.P.
(b) Haryana
(c) Maharashtra
(d) U.P.
148. What fraction of rice is produced by Haryana of the total production of rice by
all the above the States?
(a) $\frac{1}{8}$
(b) $\frac{1}{12}$
(c) $\frac{1}{4}$
(d) $\frac{1}{6}$
149. Which of the above States is least producer of wheat?
(a) Maharashtra
(b) W.B.
(c) M.P.
(d) Haryana
150. In which of the above States, the total production of rice and wheat in the least?
(a) W.B.
(b) M.P
(c) Maharashtra (d) Haryana
