

Section : Numerical Aptitude

Q.1 What is the average of the sixty terms given below?

$\cos^2 x, \cos^2 2x, \cos^2 3x, \dots, \cos^2 30x, \sin^2 x, \sin^2 2x, \sin^2 3x, \dots, \sin^2 30x$

- Ans
- 1. $\cos^2 x$
 - 2. 0.5
 - 3. 1
 - 4. $\cos^2 x \sin^2 x$

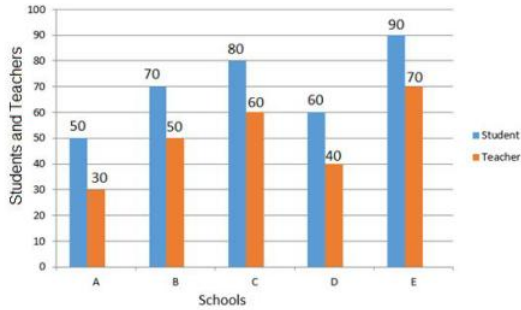
Question ID : 65497817475
Chosen Option : 2

Q.2 A wooden piece in the shape of a cuboid is divided into five equal parts by cutting it with four cuts perpendicular to its length, and it turns out that each piece is a cube of volume 27 cm^3 . What is the total surface area (in cm^2) of the cuboid?

- Ans
- 1. 150
 - 2. 174
 - 3. 216
 - 4. 198

Question ID : 65497817488
Chosen Option : 4

Q.3 The number of teachers and students in five schools A, B, C, D and E in a city has been depicted through the given bar graph, where the number of students has been presented as multiples of ten. Study the bar graph and answer the question that follows.



What is the proportion of the student to teacher ratios across the five schools, A, D, B, C, E?

- Ans**
- 1. 756 : 840 : 900 : 945 : 980
 - 2. 350 : 275 : 287 : 300 : 320
 - 3. 350 : 315 : 294 : 280 : 270
 - 4. 720 : 800 : 926 : 935 : 975

Question ID : 65497817494

Chosen Option : 3

Q.4 The difference between a positive number and its reciprocal increases by a factor of $\frac{175}{144}$ when the number is made to increase by 20%. What is the number?

- Ans**
- 1. 7.5
 - 2. 6
 - 3. 2.5
 - 4. 5

Question ID : 65497817478

Chosen Option : --

Q.5 The simple interest earned on a sum is $\frac{1}{25}$ of the sum, where the number of years of investment is equal to the rate percentage. For how many years was the sum invested?

- Ans**
- 1. 2
 - 2. 5
 - 3. 3
 - 4. 4

Question ID : 65497817485

Chosen Option : 1

Q.6 Four persons, P, Q, R, S were engaged for doing a task, with the condition that P, Q, R, S work, respectively, on (Mondays, Thursdays); (Tuesdays, Fridays); (Wednesdays, Saturdays); (Sundays). The task was began on a Monday, and got completed on the 15th day, which was also a Monday. If the efficiencies of P, Q, R, S in respect of doing this task were in the proportion $1 : 2 : 3 : 4$, then in how many days could R complete the task, working alone without break?

- Ans**
- 1. 13
 - 2. 10
 - 3. 11
 - 4. 12

Question ID : 65497817472
Chosen Option : 2

Q.7 How many numbers between 500 and 900, both inclusive, are exactly divisible by all the numbers, 12, 15, 20 and 30?

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

Question ID : 65497817490
Chosen Option : 3

Q.8 If 24 men can do a work in 15 days by working 12 hours daily, then in how many days will 36 men be able to do double the quantum of work, by working 10 hours daily?

- Ans**
- 1. 30
 - 2. 32
 - 3. 24
 - 4. 12

Question ID : 65497817471
Chosen Option : 3

Q.9 The material of a sphere of radius r is melted and recast into a hollow cylindrical shell of thickness a and outer radius b . What is its length assuming that no material is lost in recasting?

- Ans**
- 1. $\frac{4r^3}{3a(2a-b)}$
 - 2. $\frac{4r^3}{3a(b+a)(b-a)}$
 - 3. $\frac{4r^3}{3a(b-a)}$
 - 4. $\frac{4r^3}{3a(2b-a)}$

Question ID : 65497817489
Chosen Option : 3

Q.10 A lady walks to her office every day from home and maintains a fixed time for the same. On one day she decreases her speed by 25%. By what fraction of her usual time will she be late on that day?

- Ans**
- 1. $\frac{2}{3}$
 - 2. $\frac{1}{4}$
 - 3. $\frac{1}{3}$
 - 4. $\frac{1}{6}$

Question ID : 65497817473
Chosen Option : 3

Q.11 Two similar pieces of an item were purchased by paying the same amount for each, and they were sold, respectively, for a profit of 25% and a loss of 20%. What was his profit percentage?

- Ans**
- 1. 2
 - 2. 4.5
 - 3. 2.5
 - 4. 5

Question ID : 65497817480
Chosen Option : 3

Q.12 If $\frac{a}{b} = \frac{b}{c} = \frac{c}{d}$, then $\frac{a}{d}$ in terms of b and c is equal to:

- Ans**
- 1. $\left(\frac{b}{c}\right)^3$
 - 2. $\left(\frac{b}{c}\right)^2$
 - 3. $\left(\frac{b}{c}\right)^{1.5}$
 - 4. $\left(\frac{b}{c}\right)^{0.5}$

Question ID : 65497817481
Chosen Option : 1

Q.13 In what ratio should two varieties of tea at ₹300 and ₹400 per kg, respectively, be mixed so that the mixture is worth ₹320 per kg?

- Ans**
- 1. 1 : 5
 - 2. 1 : 4
 - 3. 5 : 1
 - 4. 4 : 1

Question ID : 65497817482
Chosen Option : 4

Q.14

Simplify $\frac{10^2 \text{ of } \left(\frac{1}{5}\right)^3 \div \frac{1}{4} \times 4 - \frac{2}{5} \text{ of } 15}{\frac{4}{5} \left(5 \div 5 \text{ of } 12 + \frac{1}{6}\right)}$

Ans

✗ 1. $-\frac{65}{73}$

✓ 2. 34

✗ 3. $-\frac{147}{73}$

✗ 4. $-\frac{78}{73}$

Question ID : 65497817997
Chosen Option : 2

Q.15 If a person sells 80% of the number of toys for an amount with which he purchased all the toys, then what is his profit percentage?

Ans

✗ 1. 20

✗ 2. 22.5

✓ 3. 25

✗ 4. 40

Question ID : 65497817479
Chosen Option : 3

Q.16 X, Y, Z enter into a partnership venture with a capital of ₹1,20,000, in which the contribution of Y and Z are, respectively, 40% more and ₹1,000 more than that of X. The profit earned is 20% of the capital. Out of this profit, 10% goes towards some incidental expenses. What is the share (in ₹) of X out of it?

Ans

✗ 1. 7,500

✗ 2. 4,800

✗ 3. 7,000

✓ 4. 6,300

Question ID : 65497817483
Chosen Option : 4

Q.17 The line graph that can replace a histogram is called a/an:

Ans

✓ 1. frequency polygon

✗ 2. ogive

✗ 3. cumulative frequency less than type graph

✗ 4. cumulative frequency more than type graph

Question ID : 65497817486
Chosen Option : --

Q.18 A certain sum was invested for three years in a scheme in which the interest gets compounded annually. During the first two years, the scheme provided growths at the rates of 80% and 60%, respectively, but during the third year there was a decline by 40%. What was the overall interest rate for three years?

- Ans**
- 1. 24%
 - 2. 20%
 - 3. 22.5%
 - 4. 48.6%

Question ID : 65497817484
Chosen Option : 2

Q.19 Two circles touch each other externally; the distance between their centres is 12 cm and the sum of their areas (in cm^2) is 74π . What is the radius of the smaller circle?

- Ans**
- 1. 2.8
 - 2. 4.5
 - 3. 5
 - 4. 3

Question ID : 65497817487
Chosen Option : 3

Q.20 The average daily expenditure of a person during the month of February 2020 was ₹120. The average expenditure for the first 15 days was ₹142, and for the last 15 days was ₹96. What was his expenditure (in ₹) on 15th February?

- Ans**
- 1. 90
 - 2. 98
 - 3. 95
 - 4. 88

Question ID : 65497817476
Chosen Option : 1

Q.21 An article was subject to three successive discounts, whereby a customer had to pay ₹2,366.8 less than the marked price of ₹12,500. If the rates of the first two discounts were, respectively, 12% and 6%, then what was the rate percentage of the third discount?

- Ans**
- 1. 3.6
 - 2. 2
 - 3. 2.5
 - 4. 3

Question ID : 65497817477
Chosen Option : 2

Q.22

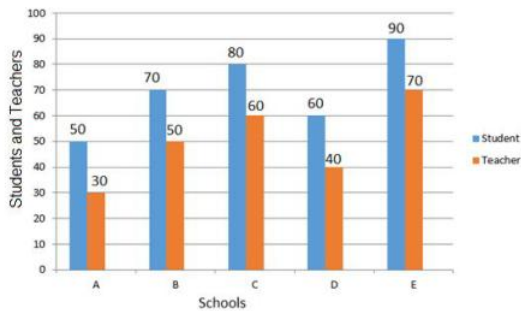
The value of $\left(120 + \frac{5}{4}\right) - \left\{ \left(105 - 5 \times 3 + 2 \text{ of } 17 \div \frac{1}{6}\right) \div \left(5 + \frac{1}{4}\right) \right\}$ is:

- Ans
- 1. 46
 - 2. 50
 - 3. 45
 - 4. 40

Question ID : 65497815875
Chosen Option : 4

Q.23

The number of teachers and students in five schools A, B, C, D and E in a city has been depicted through the given bar graph, where the number of students has been presented as multiples of ten. Study the bar graph and answer the question that follows.



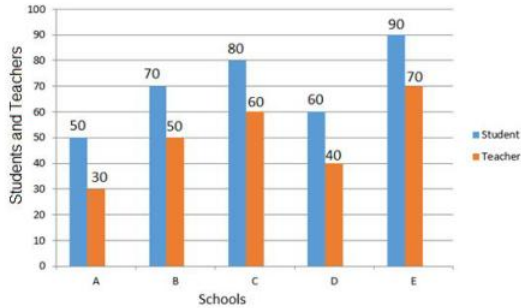
If 20% of the students of E get transferred such that they get equally distributed among A and C, and 10% of their teachers are transferred to A, then which among the following schools will have its student to teacher ratio closest to that of D?

- Ans
- 1. A
 - 2. C
 - 3. B
 - 4. E

Question ID : 65497817495
Chosen Option : 2



Q.24 The number of teachers and students in five schools A, B, C, D and E in a city has been depicted through the given bar graph, where the number of students has been presented as multiples of ten. Study the bar graph and answer the question that follows.



Which school among the following has the highest teacher to student ratio?

- Ans**
- 1. B
 - 2. E
 - 3. C
 - 4. D

Question ID : 65497817493

Chosen Option : 2

Q.25 Two clocks were synchronised at 11 a.m. on a Sunday. Thereafter, every day they were, respectively, found to gain and lose one minute per day. What time, expressed in hours and minutes, will the second clock show when the first clock shows 10 p.m. on the next Friday?

- Ans**
- 1. 9 hours $48\frac{3}{11}$ minutes p.m.
 - 2. 9 hours $48\frac{7}{11}$ minutes p.m.
 - 3. 9 hours $49\frac{1}{11}$ minutes p.m.
 - 4. 9 hours $49\frac{9}{11}$ minutes p.m.

Question ID : 65497817474

Chosen Option : 1

