

Section : Quantitative Aptitude

**Q.1** In a trapezium  $ABCD$ ,  $DC \parallel AB$ ,  $AB = 16 \text{ cm}$  and  $DC = 11.2 \text{ cm}$ . What is the length (in  $\text{cm}$ ) of the line segment joining the mid points of its diagonals?

- Ans**
- 1. 1.2
  - 2. 1.8
  - 3. 2.8
  - 4. 2.4

Question ID : 6549787093  
Status : Answered  
Chosen Option : 4

**Q.2** If  $(1 + \cot^2 \theta) + (1 + (\cot^2 \theta)^{-1})$  is equal to  $k$ , then  $\sqrt{k} = ?$

- Ans**
- 1.  $\operatorname{cosec} \theta \cos \theta$
  - 2.  $\operatorname{cosec} \theta \sec \theta$
  - 3.  $\sin \theta \sec \theta$
  - 4.  $\sin \theta \cos \theta$

Question ID : 6549787101  
Status : Answered  
Chosen Option : 2

**Q.3** A marks her goods 25% above the cost price. She sells 25% of the goods at the marked price, 60% at 25% discount and the remaining at 10% discount. What is her overall gain or loss per cent?

- Ans**
- 1. Gain 15.124%
  - 2. Loss 18.175%
  - 3. Loss 3.125%
  - 4. Gain 4.375%

Question ID : 6549787085  
Status : Answered  
Chosen Option : 3

**Q.4** In a class of 80 students (boys and girls) there are 60% girls. The average weight of the boys is 58 kg and that of the girls is 52 kg. What is the average weight (in kg) of the whole class?

- Ans
- 1. 55
  - 2. 53.6
  - 3. 54.4
  - 4. 56.2

Question ID : 6549786074  
Status : Answered  
Chosen Option : 3

**Q.5** By selling a car for ₹6,32,500, a showroom owner makes a profit of 15%. If he sold the car at ₹8,10,000, then what would be the profit percentage (correct to one decimal place)?

- Ans
- 1. 51.4%
  - 2. 47.3%
  - 3. 44.8%
  - 4. 41.5%

Question ID : 6549787087  
Status : Answered  
Chosen Option : 2

**Q.6** If  $a + b + c = 5$ ,  $a^2 + b^2 + c^2 = 27$ , and  $a^3 + b^3 + c^3 = 125$ , then the value of  $\frac{abc}{5}$  is:

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

Question ID : 6549787095  
Status : Answered  
Chosen Option : 3

**Q.7** The sides  $AB$ ,  $BC$  and  $AC$  of  $\triangle ABC$  are 12 cm, 8 cm and 10 cm, respectively. A circle is inscribed in the triangle touching  $AB$ ,  $BC$  and  $AC$  at  $D$ ,  $E$  and  $F$ , respectively. The ratio of the lengths of  $AD$  to  $CE$  is:

- Ans
- 1. 5 : 7
  - 2. 3 : 5
  - 3. 10 : 7
  - 4. 7 : 3

Question ID : 6549787091  
Status : Answered  
Chosen Option : 4

Q.8  $\frac{775 \times 775 \times 775 + 225 \times 225 \times 225}{77.5 \times 77.5 + 22.5 \times 22.5 - 77.5 \times 22.5}$  is equal to:

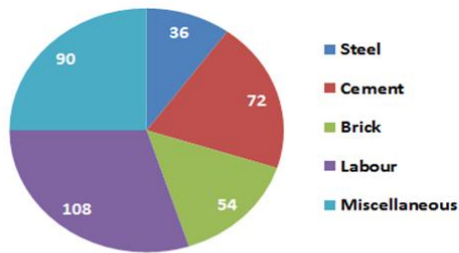
- Ans
- 1. 0.1
  - 2. 100000
  - 3. 100
  - 4. 10000

Question ID : 6549787098  
 Status : Answered  
 Chosen Option : 2

Q.9 Study the pie chart and answer the question that follows.

The given pie chart shows the degree of cost incurred in different expenditure on the construction of a house. The total expenditure is ₹31,50,000.

Degree of cost incurred in different expenditure



What is the percentage of expenditure on cement?

- Ans
- 1. 25%
  - 2. 15%
  - 3. 30%
  - 4. 20%

Question ID : 6549786093  
 Status : Not Answered  
 Chosen Option : --

Q.10 A man covers  $\frac{5}{12}$  of a total journey by train,  $\frac{7}{18}$  of the journey by bus and the remaining 7 km on foot. His total journey (in km) is:

- Ans
- 1. 36 km
  - 2. 35 km
  - 3. 40 km
  - 4. 32 km

Question ID : 6549786072  
 Status : Answered  
 Chosen Option : 1

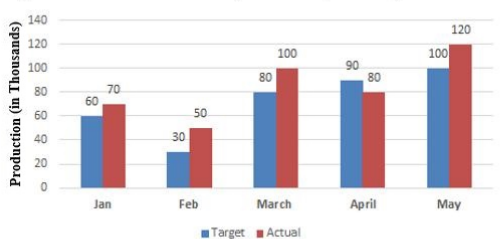
Q.11 If  $(x - 1.5)^3 + (x - 4)^3 + (x - 3.5)^3 = 3(x - 1.5)(x - 4)(x - 3.5)$ , then what is the value of  $x$ ?

- Ans
- 1. 1
  - 2. 9
  - 3. 6
  - 4. 3

Question ID : 6549786084  
 Status : Answered  
 Chosen Option : 4

Q.12 Study the graph which shows the target and actual production of ACs, (in thousands) of a factory over five months and answer the question that follows.

Target and Actual Production of AC's (in Thousands) of a factory over five months



The total target production of ACs in February, March, April and May is what percent less than the total actual production of ACs over five months? (correct to one decimal place)

- Ans
- 1. 28.6%
  - 2. 26.8%
  - 3. 27.9%
  - 4. 29.7%

Question ID : 6549786095  
 Status : Not Answered  
 Chosen Option : --

Q.13 The volume of a right circular cone is  $462 \text{ cm}^3$ . If its height is 12 cm, then the area of its base (in  $\text{cm}^2$ ) is:

- Ans
- 1. 98.5
  - 2. 103.5
  - 3. 124.5
  - 4. 115.5

Question ID : 6549787083  
 Status : Answered  
 Chosen Option : 4

Q.14 If  $a + b + c = 11$  and  $ab + bc + ca = 15$ , then what is the value of  $a^3 + b^3 + c^3 - 3abc$ ?

- Ans
- 1. 638
  - 2. 386
  - 3. 836
  - 4. 368

Question ID : 6549787096  
 Status : Answered  
 Chosen Option : 3

Q.15 Working together A, B and C can complete a piece of work in 3 days. A completes the same work in 24 days and B completes it in 6 days. How many days will C alone take to complete the same work?

- Ans
- 1. 6
  - 2. 12
  - 3. 8
  - 4. 18

Question ID : 6549787081  
 Status : Answered  
 Chosen Option : 3

Q.16 If  $3\cos\theta = 2\sin^2\theta, 0^\circ < \theta < 90^\circ$ , then what is the value of  $(\tan^2\theta + \sec^2\theta - \operatorname{cosec}^2\theta)$ ?

- Ans
- 1.  $-\frac{7}{3}$
  - 2.  $\frac{7}{3}$
  - 3.  $\frac{17}{3}$
  - 4.  $-\frac{17}{3}$

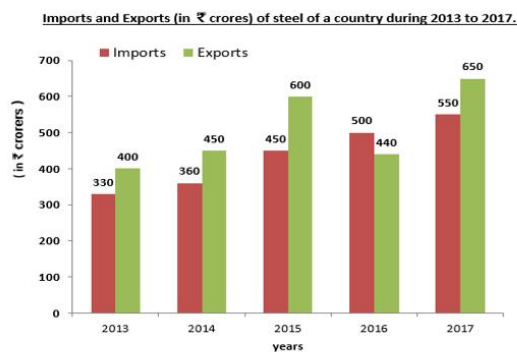
Question ID : 6549786090  
 Status : Answered  
 Chosen Option : 3

Q.17 A sum lent at simple interest amounts to ₹6,240.80 in one year and to ₹7,563.20 in 4 years. The sum (in ₹) and the rate of interest per annum, respectively, are:

- Ans
- 1. 5,800, 8.5%
  - 2. 6,200, 8.5%
  - 3. 6,200, 7.6%
  - 4. 5,800, 7.6%

Question ID : 6549786079  
 Status : Answered  
 Chosen Option : 4

**Q.18** Study the bar graph which shows the imports and exports (in ₹) of steel of a country during 2013 to 2017 and answer the question that follows.



For how many year(s) were the imports less than 80% of the average exports (per year) of the country during the five years?

- Ans
- 1. 1
  - 2. 2
  - 3. 3
  - 4. 4

Question ID : 6549787102  
 Status : **Not Answered**  
 Chosen Option : --

**Q.19** What is the ratio of the mean proportional between 1.2 and 10.8 to the third proportional to 0.2 and 1.2?

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

Question ID : 6549786078  
 Status : **Answered**  
 Chosen Option : 4

**Q.20** In  $\Delta PQR$ ,  $QT \perp PR$  and  $S$  is a point on  $QR$  such that  $\angle PSQ = p^\circ$ . If  $\angle TQR = 44^\circ$  and  $\angle SPR = 32^\circ$ , then the value of  $p$  is:

- Ans
- 1.  $78^\circ$
  - 2.  $76^\circ$
  - 3.  $82^\circ$
  - 4.  $72^\circ$

Question ID : 6549786082  
 Status : **Answered**  
 Chosen Option : 1

Q.21 If the 11-digit number  $4y6884805x6$  is divisible by 72, and  $x \neq y$ , then the value of  $\sqrt{xy}$  is:

- Ans
- 1.  $\sqrt{8}$
  - 2.  $\sqrt{6}$
  - 3.  $\sqrt{12}$
  - 4.  $\sqrt{5}$

Question ID : 6549786087  
 Status : Not Answered  
 Chosen Option : --

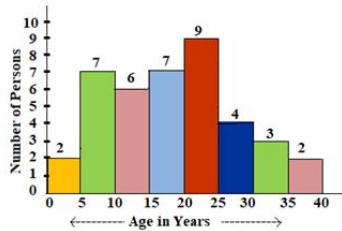
Q.22 Two circles of radii 18 cm and 12 cm intersect each other and the length of their common chord is 16 cm. What is the distance (in cm) between their centres?

- Ans
- 1.  $2\sqrt{5}(4 - \sqrt{13})$
  - 2.  $2\sqrt{5}(4 + \sqrt{13})$
  - 3.  $2\sqrt{5}(-2 + \sqrt{13})$
  - 4.  $2\sqrt{5}(2 + \sqrt{13})$

Question ID : 6549786080  
 Status : Not Answered  
 Chosen Option : --

Q.23 Some families went on an outstation tour. The given histogram shows their ages.

What is the ratio of the number of persons of age less than 15 years to that of persons of age less than 30 years?



- Ans
- 1. 11 : 19
  - 2. 3 : 7
  - 3. 15 : 31
  - 4. 15 : 38

Question ID : 6549788417  
 Status : Not Answered  
 Chosen Option : --

**Q.24** When the price of an item was reduced by 20%, its sales increased by  $x\%$ . If there is an increase of 25% in the receipt of the revenue, then the value of  $x$  is :

- Ans  1. 56.25%  
 2. 53.84%  
 3. 61.5%  
 4. 55.75%

Question ID : **6549786076**  
Status : **Not Answered**  
Chosen Option : --

**Q.25** The value of  $\cot^2 46^\circ - \sec^2 44^\circ + (\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 89^\circ)$  is:

- Ans  1. 21.5  
 2. 23.5  
 3. 22.5  
 4. 20.5

Question ID : **6549787099**  
Status : **Not Answered**  
Chosen Option : --