

BLOGS

Sectional Test on Quantitative Techniques for CLAT UG [Part 13]

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1. A set of 12 numbers has an average of 30. The average for the initial five numbers is 24, and the average for the final four numbers is 36. Determine the average of the three numbers that remain.

- a. 28
- b. 30
- c. 32
- d. 34

2. A shopkeeper sells an article for ₹1,440 at a loss of 10%. What is the cost price?

- a. ₹1,500
- b. ₹1,600
- c. ₹1,440
- d. ₹1,300

3. In a class of 180 students, the proportion of boys to girls is 4 to 5. Determine the number of boys in the class.

- a. 80
- b. 90
- c. 100
- d. 120

4. What is the average speed of a car that travels 90 km at 45 km/h and then returns the same 90 km distance at 30 km/h?

- a. 36 km/h
- b. 37.5 km/h
- c. 40 km/h
- d. 42 km/h

5. What is the profit percentage if the cost price of 15 articles is the same as the selling price of 12 articles?

- a. 20%
- b. 25%
- c. 30%
- d. $33\frac{1}{3}\%$

6. The number increased by 25% and then decreased by 20%. What is the net percentage change?

- a. No change
- b. 5% increase
- c. 5% decrease
- d. 10% decrease

7. A single ball is randomly selected from a bag that contains 7 red, 5 blue, and 8 green balls. Calculate the likelihood that the drawn ball is green.

- a. $\frac{2}{7}$
- b. $\frac{8}{20}$
- c. $\frac{1}{4}$
- d. $\frac{3}{10}$

8. Two numbers are in the ratio 3 : 7 and their sum is 200. What is the larger number?

- a. 120
- b. 140
- c. 160
- d. 170

9. A train travels 360 km. If its speed increased by 10 km/h, the journey time would decrease by 2 hours. What was the train's initial speed?

- a. 30 km/h
- b. 36 km/h
- c. 40 km/h
- d. 45 km/h

10. The perimeter of a square is 80 m. Find its area.

- a. 400 sq m

- b. 256 sq m
- c. 625 sq m
- d. 160 sq m

11. A group of six people has an average age of 24 years. When a seventh person is included in the group, the new average age increases to 26 years. Determine the age of this newly added person.

- a. 34 years
- b. 36 years
- c. 38 years
- d. 40 years

12. A man spends 75% of his income. If his savings are ₹6,000, what is his income?

- a. ₹18,000
- b. ₹20,000
- c. ₹22,000
- d. ₹24,000

13. The side of a cube is doubled. By how many times does its volume increase?

- a. 2 times
- b. 4 times
- c. 6 times
- d. 8 times

14. If the radius of a circle is reduced to half, what fraction of the original area remains?

- a. $\frac{1}{4}$
- b. $\frac{1}{2}$
- c. $\frac{3}{4}$
- d. $\frac{2}{3}$

15. A boat traveled a distance of 24 km. The trip upstream took 6 hours, and the return trip downstream took 4 hours. What is the speed of the current?

- a. 1 km/h
- b. 2 km/h
- c. 3 km/h
- d. 4 km/h

Answers

1. Correct Answer: C

$$\text{Total} = 12 \times 30 = 360$$

$$\text{Known} = (5 \times 24 + 4 \times 36) = 264$$

$$\text{Remaining} = 96 \rightarrow \text{Avg} = 96/3 = \mathbf{32}$$

2. Correct Answer: B

$$\text{SP} = 90\%$$

$$\text{CP} = 1440 \times 100 / 90 = \mathbf{₹1600}$$

3. Correct Answer: B

$$\text{Total parts} = 9$$

$$1 \text{ part} = 20$$

$$\text{Boys} = 4 \times 20 = \mathbf{90}$$

4. Correct Answer: A

$$\text{Avg speed} = 2ab/(a+b) = 2 \times 45 \times 30 / 75 = \mathbf{36 \text{ km/h}}$$

5. Correct Answer: B

$$\text{CP} : \text{SP} = 15 : 12 = 5 : 4$$

$$\text{Profit} = (1/4) \times 100 = \mathbf{25\%}$$

6. Correct Answer: C

$$\text{Net \%} = -(25 \times 20)/100 = \mathbf{5\% \text{ decrease}}$$

7. Correct Answer: B

$$\text{Green} = 8, \text{Total} = 20$$

$$\text{Probability} = \mathbf{8/20}$$

8. Correct Answer: B

$$\text{Total parts} = 10$$

$$1 \text{ part} = 20$$

$$\text{Larger} = 7 \times 20 = \mathbf{140}$$

9. Correct Answer: B

$$\text{Let speed} = x$$

$$360/x - 360/(x+10) = 2$$

$$x = 36 \text{ km/h}$$

10. Correct Answer: B

$$\text{Side} = 80/4 = 20$$

$$\text{Area} = 20^2 = \mathbf{256 \text{ sq m}}$$

11. Correct Answer: C

$$\text{Old total} = 6 \times 24 = 144$$

$$\text{New total} = 7 \times 26 = 182$$

$$\text{Age added} = \mathbf{38 \text{ years}}$$

12. Correct Answer: B

$$\text{Savings} = 25\% = 6000$$

$$\text{Income} = 6000 \times 100/25 = \mathbf{₹20,000}$$

13. Correct Answer: D

$$\text{Volume} \propto \text{side}^3$$

$$(2)^3 = \mathbf{8 \text{ times}}$$

14. Correct Answer: A

$$\text{Area} \propto r^2$$

$$(1/2)^2 = \mathbf{1/4}$$

15. Correct Answer: B

$$\text{Downstream} = 24/4 = 6 \text{ km/h}$$

$$\text{Upstream} = 24/6 = 4 \text{ km/h}$$

$$\text{Stream} = (6-4)/2 = \mathbf{2 \text{ km/h}}$$