

BLOGS

Sectional Test on Quantitative Techniques for CLAT UG [Part 12]

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1. What is the average of the three remaining numbers, given that the average of ten numbers is 35, the first four numbers average 30, and the last three numbers average 40?

- a) 36.67
- b) 38
- c) 40.2
- d) 42

2. A principal amount yields ₹4,800 after 2 years and ₹5,040 after 3 years, earning simple interest at a constant rate. Determine the value of the principal.

- a) ₹4,200
- b) ₹4,400
- c) ₹4,600
- d) ₹4,800

3. If the ratio of the ages of A and B is 5 : 6 and B is 8 years older than A, find A's age.

- a) 32
- b) 36
- c) 40
- d) 48

4. What was the average speed of a person who traveled a specific distance at a rate of 12 km/h and then returned along the same path at 8 km/h?

- a) 9.2 km/h
- b) 9.6 km/h
- c) 10 km/h
- d) 10.5 km/h

5. What is the loss percentage if the cost price of 20 items is the same as the selling price of 25 items?

- a) 20%
- b) 25%
- c) 30%
- d) 35%

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

- a) No change
- b) 2% increase
- c) 4% decrease
- d) 5% decrease

7. What is the probability of randomly drawing either a red or a blue ball from a bag containing 6 red, 5 blue, and 9 green balls?

- a) $\frac{11}{20}$
- b) $\frac{3}{10}$
- c) $\frac{1}{2}$
- d) $\frac{9}{20}$

8. A mixture contains milk and water in a ratio of 7:3. When 15 litres of water are added to the mixture, the new ratio of milk to water becomes 7:6. What was the total original quantity of the mixture?

- a) 30 litres
- b) 35 litres
- c) 40 litres
- d) 50 litres

9. Two numbers are such that their difference is 24 and their ratio is 5 : 3. Find the larger number.

- a) 36
- b) 40
- c) 48
- d) 60

10. A train covered a distance of 180 km at a consistent speed. If the speed had been increased by 15 km/h, the journey would have been completed in one hour less time. What was the train's initial speed?

- a) 30 km/h
- b) 36 km/h
- c) 45 km/h
- d) 60 km/h

11. The perimeter of a square increases by 20%. By what percentage does its area increase?

- a) 20%
- b) 36%
- c) 40%
- d) 44%

12. The average of 12 data points is 25. Given that the first 5 data points have an average of 20, and the final 4 data points have an average of 30, determine the average of the measurements that remain.

- a) 24
- b) 26.67
- c) 28
- d) 30

13. A person saves 25% of his income. If his expenditure is ₹18,000, what is his income?

- a) ₹22,500
- b) ₹24,000
- c) ₹27,000
- d) ₹30,000

14. If the side of a cube is increased by 10%, by what percentage does its volume increase?

- a) 21%
- b) 30%
- c) 33.1%

d) 35%

15. A boat covers 24 km in 2 hours when traveling downstream and takes 4 hours to cover the same 24 km while moving upstream. Calculate the speed of the stream.

a) 3 km/h

b) 4 km/h

c) 5 km/h

d) 6 km/h

Answers

1. Correct Answer: A

$$\text{Total} = 10 \times 35 = 350$$

$$\text{Known sum} = (4 \times 30 + 3 \times 40) = 240$$

$$\text{Remaining} = 110 \rightarrow \text{Avg} = 110/3 = 36.67$$

2. Correct Answer: B

$$\text{Difference} = ₹240 = \text{one year's interest}$$

$$\text{SI per year} = ₹240 \rightarrow 3 \text{ years SI} = ₹720$$

$$\text{Principal} = ₹5040 - 720 = ₹4,400$$

3. Correct Answer: C

$$\text{Difference} = 1 \text{ part} = 8$$

$$A = 5 \times 8 = 40$$

4. Correct Answer: B

$$\text{Avg speed} = 2ab/(a+b)$$

$$= 2 \times 12 \times 8 / 20 = 9.6 \text{ km/h}$$

5. Correct Answer: A

$$\text{Let CP per item} = 1$$

$$\text{Total CP} = 20$$

$$\text{SP per item} = 20/25 = 0.8$$

$$\text{Loss} = 20\%$$

6. Correct Answer: C

$$\text{Net \%} = -(20 \times 20)/100 = 4\% \text{ decrease}$$

7. Correct Answer: A

$$\text{Favourable} = 6 + 5 = 11$$

$$\text{Total} = 20 \rightarrow 11/20$$

8. Correct Answer: D

$$\text{Milk : Water} = 7 : 3$$

$$\text{After adding water} \rightarrow 7 : 6$$

$$\text{Water part increases from 3 to 6} = +3 \text{ parts}$$

$$\text{Given increase} = 15 \text{ L}$$

$$\text{So, 1 part} = 5 \text{ L}$$

$$\text{Original total parts} = 7 + 3 = 10$$

$$\text{Original mixture} = 10 \times 5 = 50 \text{ litres}$$

9. Correct Answer: C

$$\text{Difference} = 2 \text{ parts} = 24 \rightarrow 1 \text{ part} = 12$$

$$\text{Larger} = 5 \times 12 = 60$$

10. Correct Answer: B

$$\text{Speed} = \text{Distance/Time}$$

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

$$\text{Time difference} = 1 \text{ hour}$$

$$180/x - 180/(x+15) = 1$$

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

11. Correct Answer: B

$$\text{Side} \uparrow 20\% \rightarrow \text{area} \uparrow (1.2)^2 - 1 = 44\%$$

12. Correct Answer: B

$$\text{Total} = 12 \times 25 = 300$$

$$\text{Known} = (5 \times 20 + 4 \times 30) = 220$$

$$\text{Remaining} = 80 \rightarrow \text{Avg} = 80/3 = 26.67$$

13. Correct Answer: B

$$75\% = 18,000$$

$$\text{Income} = ₹24,000$$

14. Correct Answer: C

$$\text{Volume } \uparrow = (1.1)^3 - 1 = 33.1\%$$

15. Correct Answer: A

$$\text{Downstream speed} = 24/2 = 12 \text{ km/h}$$

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

$$\text{Stream speed} = (12 - 6)/2 = 3 \text{ km/h}$$