

BLOGS

Sectional Test on Quantitative Techniques for CLAT UG [Part 16]

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1. The average of 20 numbers is 50. If the average of 19 of them is 48, find the missing number.

- a. 76
- b. 80
- c. 88
- d. 92

2. The amount of a principal sum grows to ₹12,320 in three years and ₹13,440 in four years at simple interest. Determine the annual simple rate of interest.

- a. 8%
- b. 9%
- c. 10%
- d. 12%

3. The ratio of two numbers is 7 : 9 and their LCM is 630. Find the greater number.

- a. 63
- b. 70
- c. 90
- d. 81

4. Two trains, measuring 180 meters and 220 meters in length, are traveling towards each other on parallel tracks at speeds of 54 km/h and 72 km/h. What is the time required for them to fully pass one another?

- a. 12 sec
- b. 11.43 sec
- c. 14 sec
- d. 10 sec

5. Determine the profit percentage when the cost of 25 items is equivalent to the sale price of 20 items.

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

6. A number undergoes a sequence of changes: first an increase of 25%, followed by a decrease of 20%, and finally an increase of 10%. Determine the overall percentage change.

- a. 8% increase
- b. 10% increase
- c. 12% increase
- d. 5% increase

7. Two cards are selected from a standard deck of 52 cards without the cards being replaced. Calculate the probability that both of the cards selected are face cards.

- a. $11/221$
- b. $12/221$
- c. $9/221$
- d. $4/221$

8. A mixture of milk and water, initially in a 5:3 ratio, is manipulated by removing 16 litres and replacing it with 16 litres of water. This process changes the ratio to 5:4. Determine the original volume of the mixture.

- a. 64 L
- b. 72 L
- c. 80 L
- d. 96 L

9. A and B's current ages are in the proportion of 4:5. In six years, this proportion will shift to 5:6. Determine A's age today.

- a. 18
- b. 20
- c. 24

d. 30

10. A boat travels 36 km when moving downstream in 3 hours, and it covers 24 km upstream in 4 hours. Determine the boat's speed in calm water.

- a. 8 km/h
- b. 9 km/h
- c. 10 km/h
- d. 11 km/h

11. A rectangle's length is augmented by 30% while its breadth is reduced by 20%. Determine the resulting percentage alteration in the area.

- a. 4% increase
- b. 6% increase
- c. 8% increase
- d. 10% increase

12. The average of a set of 15 numbers is 42. Determine the new average if every number in the set is first multiplied by 3 and subsequently increased by 6.

- a. 126
- b. 132
- c. 138
- d. 144

13. A trader marks his goods 40% above cost price and gives two successive discounts of 10% and 5%. Find his net profit percentage.

- a. 19.7%
- b. 20%
- c. 18%
- d. 21%

14. If the side of a cube is increased by 10%, find the percentage increase in its volume.

- a. 30%
- b. 33.1%
- c. 31%
- d. 35%

15. A and B's incomes are in the ratio 3:4, and their expenditures are in the ratio 2:3. Given that both individuals save ₹6,000, what is A's income?

- a. ₹18,000
- b. ₹21,000
- c. ₹24,000
- d. ₹27,000

Answers

1. Correct Answer: C Total of 20 numbers = $20 \times 50 = 1000$ Total of 19 numbers = $19 \times 48 = 912$ Missing number = $1000 - 912 = 88$
2. Correct Answer: C Difference in amount = $13440 - 12320 = 1120 \rightarrow$ This is 1 year's interest. Principal = $12320 - (3 \times 1120) = ₹8960$ Rate = $(1120 \times 100) \div 8960 = 10\%$
3. Correct Answer: C Numbers = $7x, 9x$ LCM = $63x = 630$ $x = 10$ Greater number = $9 \times 10 = 90$
4. Correct Answer: B Relative speed = $54 + 72 = 126 \text{ km/h} = 35 \text{ m/s}$ Total distance = $180 + 220 = 400 \text{ m}$ Time = $400 \div 35 = 11.43 \text{ sec}$
5. Correct Answer: B CP of 25 = SP of 20 CP/SP = $20/25 = \frac{4}{5}$ Profit = $(1/5) \times 100 = 25\%$
6. Correct Answer: B Let value as 100 $100 \times 1.25 = 125$ $125 \times 0.80 = 100$ $100 \times 1.10 = 110$ Net change = 10% increase
7. Correct Answer: A Face cards = 12 Probability = $(12/52) \times (11/51) = 132 / 2652 = 11/221$
8. Correct Answer: C Let original = x Milk = $5/8 x$ After replacement, apply mixture formula: Final equation gives, $x = 80$ litres
9. Correct Answer: C Let ages = $4x, 5x$ $(4x + 6)/(5x + 6) = \frac{5}{6}$ Solve: $x = 6$ A = $4 \times 6 = 24$
10. Correct Answer: B Downstream = $36/3 = 12$ Upstream = $24/4 = 6$ Boat speed = $(12 + 6)/2 = 9 \text{ km/h}$
11. Correct Answer: A Area factor = $1.30 \times 0.80 = 1.04$ Increase = 4%
12. Correct Answer: B New average = $(42 \times 3) + 6 = 126 + 6 = 132$
13. Correct Answer: A Marked price = 140 After 10% discount $\rightarrow 126$ After 5% discount $\rightarrow 119.7$ Profit % = 19.7%
14. Correct Answer: B Volume factor = $(1.1)^3 = 1.331$ Increase = 33.1%
15. Correct Answer: C Let incomes = $3x, 4x$ Expenditures = $2y, 3y$ Savings equal: $3x - 2y = 6000$ $4x - 3y = 6000$ Solve $\rightarrow x = 8000$ A's income = $3 \times 8000 = ₹24,000$