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 × 50 = 1000 Total of 19 numbers = 19 × 48 = 912 Missing number = 1000 − 912 = 88
2. Correct Answer: C Difference in amount = 13440 − 12320 = 1120 → This is 1 year's interest. Principal = 12320 − (3 × 1120) = ₹8960 Rate = (1120 × 100) ÷ 8960 = 10%
3. Correct Answer: C Numbers = 7x, 9x LCM = 63x = 630 x = 10 Greater number = 9 × 10 = 90
4. Correct Answer: B Relative speed = 54 + 72 = 126 km/h = 35 m/s Total distance = 180 + 220 = 400 m Time = 400 ÷ 35 = 11.43 sec
5. Correct Answer: B CP of 25 = SP of 20 CP/SP = 20/25 = ⅘ Profit = (1/5) × 100 = 25%
6. Correct Answer: B Let value as 100 100 × 1.25 = 125 125 × 0.80 = 100 100 × 1.10 = 110 Net change = 10% increase
7. Correct Answer: A Face cards = 12 Probability = (12/52) × (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) = ⅚ Solve: x = 6 A = 4 × 6 = 24
10. Correct Answer: B Downstream = 36/3 = 12 Upstream = 24/4 = 6 Boat speed = (12 + 6)/2 = 9 km/h
11. Correct Answer: A Area factor = 1.30 × 0.80 = 1.04 Increase = 4%
12. Correct Answer: B New average = (42 × 3) + 6 = 126 + 6 = 132
13. Correct Answer: A Marked price = 140 After 10% discount → 126 After 5% discount → 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 → x = 8000 A's income = 3 × 8000 = ₹24,000