BLOGS

Sectional Test on Quantitative Techniques for CLAT UG [Part 15]

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1. Given 20 numbers with an average of 45, what is the average of the three numbers that were removed if the remaining 17 numbers have an average of 48?

a. 30

b. 35

c. 40

d. 25

2. At a simple interest rate, an amount grows to ₹7,200 after 2 years and reaches ₹8,100 after 3 years. Determine the annual rate of interest.

a. 10%

b. 12.5%

c. 15%

d. 18%

3. The ratio of two numbers is 11 : 13. If their product is 14,300, find the smaller number.

a. 99

b. 110

c. 121

d. 143

4. A train’s speed is 60 km/h for a specific distance. If the train traveled 10 km/h faster, it would save 1 hour of travel time. What is the total distance covered?

a. 360 km

b. 420 km

c. 480 km

d. 540 km

5. What is the loss percentage if the selling price of 20 articles equals the cost price of 16 articles?

a. 20%

b. 25%

c. 30%

d. 35%

6. A number is first increased by 40% and then decreased by 30%. What is the net percentage change?

a. 2% increase

b. 5% increase

c. 8% decrease

d. 12% decrease

7. What is the probability of drawing two green balls simultaneously from a box containing 5 red, 7 black, and 8 green balls?

a. 14/95

b. 4/95

c. 7/95

d. 8/95

8. The original mixture of milk and water was in a 9:5 ratio. After 20 litres of water were added, the ratio shifted to 9:7. Determine the initial volume of the mixture.

a. 56 litres

b. 70 litres

c. 84 litres

d. 98 litres

9. A family of six has an average age of 27 years. If a 5-year-old child joins the family, what will their new average age be?

a. 24.2 years

b. 25 years

c. 23.85 years

d. 27 years

10. A boat travels 48 km with the current in 4 hours, but the return journey against the current takes 6 hours. Determine the speed of the stream.

a. 2 km/h

b. 3 km/h

c. 4 km/h

d. 5 km/h

11. A rectangle's length undergoes a 20% increase, while its breadth is reduced by 10%. Determine the resulting overall percentage change in the area.

a. 8% increase

b. 10% increase

c. 12% increase

d. 15% increase

12. The average of the first 10 numbers from a set of 18 is 32, and the remaining 8 numbers have an average of 40. Determine the overall average of all 18 numbers.

a. 34.2

b. 42

c. 35.55

d. 38.9

13. A man saves 40% of his income. His expenditure increases by 25%, due to which his savings reduce by ₹2,000. What is his original income?

a. ₹20,000

b. ₹25,000

c. ₹30,000

d. ₹35,000

14. If the side of a cube is decreased by 20%, by what percentage does its volume decrease?

a. 36%

b. 48.8%

c. 51.2%

d. 60%

15. The current ratio of ages between A and B is 5:7. In a decade, this ratio will shift to 7:9. Determine the current age of B.

a. 28

b. 35

c. 42

d. 49

Answers

1. Correct Answer: A

Total of 20 numbers = 20×45 = 900

Remaining total = 17×48 = 816

Removed total = 900 − 816 = 84

Average = 84 ÷ 3 = **30**

2. Correct Answer: C

Difference = 8100 − 7200 = 900 = 1 year's SI

Principal = 7200 − 2×900 = 5400

Rate = (900×100)/(5400) = **15%**

3. Correct Answer: B

Let numbers = 11x, 13x

Product = $143x^2 = 14300$

$x^2 = 100 \rightarrow x = 10$

Smaller = 11×10 = **110**

4. Correct Answer: C

Let speed = x

480/x − 480/(x+10) = 1

Solving gives x = 60

Distance = 60×8 = **480 km**

5. Correct Answer: B

CP of 16 = SP of 20

CP/SP = 20/16 = 5/4

Loss = (1/4)×100 = **25%**

6. Correct Answer: C

Net % = 40 − 30 − (40×30)/100 = 10 − 12 = **−8% (8% decrease)**

7. Correct Answer: A

Green balls = 8

Probability = (8/20)×(7/19) = **14/95**

8. Correct Answer: C

Water increases by 2 parts = 20 L

1 part = 10 L

Original parts = 14

Quantity = 14×10 = **84 L**

9. Correct Answer: C

Old total = 6×27 = 162

New total = 162 + 5 = 167

Average = 167/7 = **23.85 years**

10. Correct Answer: B

Downstream = 48/4 = 12

Upstream = 48/6 = 8

Stream = (12−8)/2 = **3 km/h**

11. Correct Answer: A

Area change = (1.2×0.9 − 1)×100 = (1.08 − 1)×100 = **8% increase**

12. Correct Answer: C

Total = (10×32 + 8×40) = 640

Average = 640/18 = **35.55**

13. Correct Answer: B

Savings = 40%, Expenditure = 60%

Increase in expense = 25% of 60% = 15%

15% = ₹2000

Income = 2000×100/15 = **₹25,000**

14. Correct Answer: C

Volume ∝ side^3

Decrease = $1 - (0.8)^3 = 1 - 0.512 =$ **48.8%**

15. Correct Answer: C

Let ages = 5x, 7x

(5x+10)/(7x+10) = 7/9

x = 6

B = 7×6 = **42**