BLOGS

Sectional Test on Quantitative Techniques for CLAT UG [Part 5]

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Q1. The marked price of an item in a shop is ₹1,600. The shopkeeper offers a 20% discount on this price, still achieves a 25% profit. Determine the original cost price of the article.

a. ₹960

b. ₹1000

c. ₹1040

d. ₹1200

Q2. A train travels 360 km at a constant speed. If its speed were to increase by 20 km/h, the journey would take 2 hours less. Determine the initial speed of the train.

a. 40 km/h

b. 45 km/h

c. 60 km/h

d. 72 km/h

Q3. In a college with 1,440 students, the male-to-female ratio is 7:5. Determine the total number of girls enrolled.

a. 480

b. 600

c. 720

d. 840

Q4. Eight students appeared for a test and obtained an average score of 64 marks. Later, it was discovered that one student's score had been wrongly recorded as 84 instead of 54. What is the correct average score of the eight students?

a. 60

b. 64

c. 67

d. 62

Q5. The average age of 5 members of a family is 26 years. When a sixth member joins the family, the average age increases to 28 years. What is the age of the sixth member?

a. 32 years

b. 34 years

c. 38 years

d. 36 years

Q6. If the perimeter of a rectangle is 120 cm and its length is twice its breadth, what is its area?

a. 600 sq cm

b. 800 sq cm

c. 900 sq cm

d. 1200 sq cm

Q7. The initial population of a village was 60,000. It first experienced a 15% increase in population, followed by a 20% decrease the following year. What was the final population after these two changes?

a. 55,200

b. 70,200

c. 74,000

d. 81,080

Q8. From a box containing 7 black, 5 white, and 8 red balls, a single ball is chosen at random. Determine the probability that the chosen ball is red.

a. ⅖

b. 7/20

c. 8/20

d. 1/4

Q9. The average of 10 numbers is 50. If one number is replaced by another number which is 30 more than the original, what is the new average?

a. 50

b. 52

c. 53

d. 55

Q10. A man spends 35% of his income on rent and 45% on other expenses. If his savings are ₹4,000, what is his monthly income?

a. ₹20,000

b. ₹25,000

c. ₹30,000

d. ₹40,000

Q11. A cyclist covers a distance of 90 km in 6 hours. What is his speed in m/s?

a. 4.17 m/s

b. 4.5 m/s

c. 5 m/s

d. 6 m/s

Q12. Two numbers are in the ratio 5 : 9. If their difference is 72, what is the larger number?

a. 90

b. 108

c. 135

d. 162

Q13. What is the final percentage change in an article's price after it is first increased by 20% and then subsequently decreased by 10%?

a. 8% decrease

b. 10% increase

c. 8% increase

d. No change

Q14. If 6 workers can complete a piece of work in 20 days, how many days will 10 workers take to complete the same work, assuming all workers work at the same rate?

a. 10 days

b. 12 days

c. 14 days

d. 16 days

Q15. A shopkeeper buys 8 pens for ₹120 and sells all of them for ₹160. What is the profit percentage earned by him?

a. 20%

b. 30%

c. 25%

d. 33⅓%

Answers & Explanations

1. Correct Answer: B

Discounted SP = 80% of 1600 = 1280

1280 = 125% of CP

CP = 1280/1.25 = **₹1000**

2. Correct Answer: C

Let speed = x

360/x − 360/(x + 20) = 2

Solving gives x = **60 km/h**

3. Correct Answer: B

Total ratio parts = 7 + 5 = 12

Girls = (5/12) × 1440 = **600**

4. Correct Answer: D

Total (wrong) = 8 × 64 = 512

Excess added = 84 − 54 = 30

Correct total = 512 − 30 = 482

Correct average = 482 ÷ 8 = **62**

5. Correct Answer: C

Original total = 5 × 26 = 130

New total = 6 × 28 = 168

Age of new member = 168 − 130 = **38 years**

6. Correct Answer: B

Breadth = x, Length = 2x

Perimeter = 2(3x) = 120 → x = 20

Area = 20 × 40 = **800 sq cm**

7. Correct Answer: A

After increase = 60,000 × 1.15 = 69,000

After decrease = 69,000 × 0.8 = **55,200**

8. Correct Answer: C

Total balls = 7 + 5 + 8 = 20

Red balls = 8

Probability = **8/20**

9. Correct Answer: C

Average of 10 numbers = 50

Total of the 10 numbers = 10 × 50 = 500

One number is replaced by another number which is **30 more** than the original.

So, the total sum increases by 30.

New total = 500 + 30 = 530

New average = 530 ÷ 10 = **53**

10. Correct Answer: B

Expenses = 80%

Savings = 20% = 4,000

Income = 4,000 × 100/20 = 4,000 ×5 = **₹25,000**

11. Correct Answer: A

Distance covered = 90 km

Time taken = 6 hours

Speed = Distance/Time = 90/6 = 15 km/h

To convert km/h to m/s:

1 km/h = 5/18 m/s

Speed in m/s = 15 × 5/18 = 75/18 = 25/6 m/s **= 4.17 m/s**

12. Correct Answer: D

Let the two numbers be **5x** and **9x**.

Difference between the numbers = 9x − 5x = 4x

Given difference = 72

So, 4x = 72

x = 18

Larger number = 9x = 9 × 18 = **162**

13. Correct Answer: C

Net change = +20 − 10 − (20 × 10)/100 = 10 − 2 = **8% increase**

14. Correct Answer: B

6 × 20 = 10 × x

120 = 10x

x = **12 days**

15. Correct Answer: D

Cost price = ₹120

Selling price = ₹160

Profit = 160 − 120 = ₹40

Profit % = (Profit/Cost Price) × 100 = (40 ÷ 120) × 100 = 1/3 × 100 = **33⅓%**