Maths Questions for CLAT Exam.

CLAT Maths Quiz 35

Directions: Read the following Questions carefully and choose the right answer:

1. If compound interest on a certain sum of money at 5% per annum for 2 years is Rs. 246. The simple interest on the same sum for 4 years at 8% per annum is :

A. Rs. 786 B. Rs. 768 C. Rs. 815 D. Rs. 840

2. Men, women and children are employed to do a piece of work in proportion of 2, 3 and 5 days & their daily wages are in ratio of 2 : 2 : 8. When 100 men are employed, total daily wages of all the persons amount to Rs. 1000. Find monthly wages of the men in the April month of the year.

A. Rs. 48 B. Rs. 28 C. Rs. 100 D. Rs. 72

3. P and Q together have 3 times what Q and R have, while P, Q and R together have thirty rupees more than P. If Q has 5 times what R has then what amount does P have :

A. Rs. 45 B. Rs. 55 C. Rs. 65 D. Rs. 75

4. Neha is late by 9 minutes if she rides her cycle at a speed of 4 km/hour. If she rides at 5 km/hour, she arrives 9 min early. Find the distance.

A. 6 km B. 8 km C. 10 km D. 12 km

5. Average age of 6 boys is 12 years. The average age of 4 other boys is 18 years. Find the average age of all 10 boys.

A. 12 years B. 14.4 years C. 15.16 years D. 13 years

6. If cost price of 15 bottles is equal to the selling price of 20 bottles, find the profit or loss percentage.

A. Profit 25% B. Loss 20% C. Profit 20% D. Loss 25%

7. A bucket contained a mixture of two liquids P and Q in the ratio of 4 : 1. When 10 litres of the mixture is taken out and 10 litres of the liquid Q was added to the bucket, Ratio becomes 2 : 3. Find the initial quantity of Q.

A. 6 litres B. 5 litres C. 4 litres D. 7 litres

8. A train 420 m long is running with a speed of 36 km/h. In what time will it cross a telephone pole?

A. 42 s B. 24 s C. 36 s D. 18 s

9. Four children entered into a partnership. A puts Rs. 15 for 4 months, B puts Rs. 12 for 2 months, C puts Rs. 18 for 6 months and D puts Rs. 16 for 5 months. If profit at the end of year is Rs. 1020, what is A's share of profit?

A. Rs. 336 B. Rs. 248 C. Rs. 460 D. Rs. 225

10. The ratio between the present ages of A and B is 9:10. After 8 years the ratio of their ages will become 11:12. Find the present age of A.

A. 44 years B. 40 years C. 48 years D. 36 years

Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	A	C	A	B	D	C	A	D	D

Explanations:

1.

$$\text{C.I.} = P\left[\left(1+\frac{x}{100}\right)^{n}-1\right]$$

$$246 = P\left[\left(1+\frac{5}{100}\right)^{2}-1\right]$$

$$246 = P\left[\left(\frac{105}{100}\right)^{2}-1\right]$$

$$246 = P\left[\left(\frac{21}{20}\right)^{2}-1\right]$$

$P = 2400$

So, SI on Rs. 2400 for 4 years at 8% S.I.

$$\Rightarrow \text{S.I.} = \frac{2400\times 4\times 8}{100}$$

$= 24 \times 32 = 768$

Hence, option B is correct.

2. Given, M : W : C = 2 : 3 : 5,

But no. of Men = 100

It implies the number of women = 50 × 3 = 150 & the number of children= 5 × 50 = 250

Ratio of wages = 2 : 2 : 8

Total wages received by all = (100 × 2) + (150 × 2) + (250 × 8) = 2500

Now, if total wages are Rs. 2500, a man gets Rs. 4, if total wages are 1000,

Daily wages of a man = $\frac{4}{2500} \times 1000 = \frac{8}{5}$

Therefore, monthly wages of men in April which has 30 days

$= \frac{8}{5} \times 30$ = Rs.48

Hence, option (A) is correct.

---

3. P + Q = 3 (Q + R) **.....(i)**

P + Q + R = 30 + P

so, Q + R = 30 **.....(ii)**

Putting (ii) in eq. (i)

P + Q = 3 (30)

P + Q = 90 **.....(iii)**

Q + R = 30

as, Q = 5R

so, 5R + R = 30

6R = 30

R = 5 .....(A)

putting in eq. (ii)

Q + 5 = 30

Q = 25 .....(B)

P + Q = 90

P + 25 = 90

P = 90 – 25 = 65

Hence, option C is correct.

4. We know that

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

Let the distance be x km.
Difference in time = Difference in time

$$\frac{x}{4} - \frac{x}{5} = \frac{18}{60}$$

$$\frac{5x - 4x}{20} = \frac{3}{10}$$

$$\Rightarrow x = \frac{3}{10} \times 20 \Rightarrow 6 \text{ km}$$

Hence, option A is correct.

---

5. Average age of 6 boys = 12 years
so, total age of 6 boys = 12 × 6 = 72 years
Average age of 4 boys = 18 years
so, total age of 4 boys = 72 years
Total age of 10 boys = 72 + 72 = 144
So, average age of 10 boys = 14.4 years
Hence, option B is correct.

---

6. Let the C.P. of 1 bottle = Re.1.
so, the C.P. of 15 bottles = Rs.15
& C.P. of 20 bottles = Rs. 20

But, we know,
C.P. of 15 bottles = S.P. of 20 bottles = Rs.15
So, S.P. of 20 bottles = 15 Rs.
C.P. of 20 bottles = 20 Rs.
Hence, the seller faces loss,

$$\text{Now loss \%} = \frac{20 - 15}{20} \times 100$$

$$= \frac{5}{20} \times 100$$

$$= 25\%$$

Hence, option D is correct.

7. Let initial quantities of P and Q be 4x & x.

$\frac{P}{Q} = \frac{4x}{x}$

In 10 litres of mixture, quantity of liquid P = 4/5 x 10 = 8, therefore quantity of liquid Q = 2

When 10 litres of mixture taken out & 10 litres liquid Q is added, we get

$\frac{P}{Q} = \frac{4x - 8}{x - 2 + 10} = \frac{2}{3}$

$\Rightarrow 12x - 24 = 2x + 16$

$\Rightarrow 10x = 24 + 16$

$x = \frac{40}{10} = 4$ litres

So, the initial quantity of liquid Q was = 1x = 4 litres

Hence, option C is correct.

---

8. Length of the pole is negligible when a train crosses it. While crossing the pole, the distance thus covered is the length of the train itself.

We know that,

$\text{Time} = \frac{\text{distance}}{\text{speed}}$

Given speed = $36 \times \frac{5}{18} = 10$ m/s

Time taken = $\frac{420}{10} = 42$ sec

$\therefore$ It takes 42 seconds for the train to cross the telephone pole

Hence, option (A) is correct.

---

9. Ratio of share of profit for A, B, C and D is given by

A : B : C : D = (15 × 4) : (12 × 2) : (18 × 6) : (16 × 5)

= 60 : 24 : 108 : 80 = 15 : 6 : 27 : 20

$\Rightarrow$ A's share of profit = $\frac{15}{68} \times 1020$

= Rs. 225

Hence, option D is correct.

10. A's age = 9x, B's age = 10x

After 8 years,

9x + 8 : 10x + 8 = 11 : 12

12 (9x + 8) : 11 (10x + 8)

108x +96 = 110x + 88

110x – 108x = 96 – 88

2x = 8

x = 4

A's present age = 4 × 9 = 36

Hence, option D is correct.