Maths Questions for CLAT Exam.

CLAT Maths Quiz 49

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

1. $\frac{4}{7} \times \frac{14}{4} \div 2 + 6\ \frac{1}{3}$ **is equal to**

A. $\frac{22}{3}$ B. $\frac{20}{3}$ C. $\frac{19}{3}$ D. $\frac{23}{3}$

2. A number when divided by 5 leaves a remainder 3. What is the remainder when the square of the same number is divided by 5?

A. 1 B. 2 C. 3 D. 4

3. Average of ten positive numbers is x. If each number is increased by 15%, then x :

A. remains unchanged B. decreases C. increases by 10% D. increases by 15%

4. In the year 2007, the turnover of a company X was Rs. 95 crores. If in the year 2008, the turnover was Rs. 115 crores, then what was the percentage increase in the turnover?

A. 20% B. 21.05% C. 20.55% D. 19.7%

5. A reduction of 10% in the price of sugar enables a man to buy 25 kg more for Rs. 225. What is the original price of sugar (per kilogram)?

A. Rs. 1 B. Rs. 3 C. Rs. 5 D. Rs. 6

6. The rate of interest on a sum of money is 4% p.a. for the first 2 years : 6% p.a. for the next 3 years ; and 8% p.a. for the period beyond 5 years. If the simple interest collected on the sum for a total period of 8 years is Rs. 1280, what is the sum?

A. Rs. 2550 B. Rs. 2570 C. 2560 D. Rs. 2590

7. Four milkman rented a pasture. A grazed 24 cows for 3 months; B 10 cows for 5 months; C 35 cows for 4 months and D 21 cows for 3 months. If A's share of rent is Rs. 720, find the total rent of the field.

A. Rs. 3430 B. Rs. 3250 C. Rs. 3780 D. Rs. 3510

8. A does half as much work as B in three fourths of the time. If together, they take 18 days to complete the work, then how much time will B take to complete the work?

A. 25 days B. 24 days C. 30 days D. 27 days

9. A man travels 360 km in 4 hours, partly by air and partly by train. If he had travelled all the way by air, he would have saved 4/5 of the time he was in train and would have arrived at his destination 2 hours early. Find the distance he travelled by air and train.

A. 80 km B. 75 km C. 90 km D. 98 km

10. A man can row a boat 30 km upstream and 44 km downstream in 10 hrs. Also, he can row 40 km upstream and 55 km downstream in 13 hrs. Find the rate of the current and the speed of the boat in still water.

A. 8 km/hr, 3 km/hr B. 7 km/hr, 2 km/hr C. 9 km/hr, 3 km/hr D. 9 km/hr, 2 km/hr

Correct Answers:

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

Explanations:

1.

$$\frac{4}{7}\times\frac{14}{4}\div 2+6\frac{1}{3}=\frac{4}{7}\times\frac{14}{4}\div 2+\frac{19}{3}$$

$$=\frac{4}{7}\times\frac{7}{4}+\frac{19}{3}=1+\frac{19}{3}=\frac{22}{3}$$

Hence, option A is correct.

2. Let the number be 5k + 3

$\therefore (5k + 3)^2 = 25k^2 + 30k + 9$

$\therefore$ When the square of the number is divided by 5.

The remainder will be 4.

Hence, option D is correct

3. By the property of averages, if all the numbers contributing to the Average are altered then the Average is also altered by the same proportion.

$\Rightarrow$ If the numbers are increased by 15%, then the Average also increases by 15%.

Hence, option D is correct.

4. In 2007, turnover = Rs. 95 crores

In 2008, turnover = Rs. 115 crores

$\therefore$ Percentage increase $= \frac{115 - 95}{95} \times 100$

$= \frac{20}{95} \times 100 = \frac{400}{19} = 21.05\%$

Hence, option B is correct

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5. Let the original price be Rs. x.

Original Quantity $= \frac{225}{x}$

New price = Rs. 0.9x

New Quantity $= \frac{225}{0.9x}$

$\therefore \frac{225}{0.9x} - \frac{225}{x} = 25 \Rightarrow x =$ Rs. 1

Alternative method :

CP of 25 kg $= \frac{10}{100} \times 225 =$ Rs. 22.50

Reduced CP of 1 kg $= \frac{22.5}{25} =$ Rs. 0.90

Original price of sugar (per kg) $= \frac{0.90}{90} \times 100 =$ Rs. 1

Hence, option A is correct.

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6. Let the sum be Rs. x. Then

$\frac{x \times 4 \times 2}{100} + \frac{x \times 6 \times 3}{100} + \frac{x \times 8 \times 3}{100} = 1280$

$\Rightarrow 50x = 1280 \times 100$
$\Rightarrow x =$ Rs. 2560
Hence, option C is correct.

7. Ratio of shares of A, B, C, D = (24 × 3) : (10 × 5) : (35 × 4) : (21 × 3) = 72 : 50 : 140 : 63

Let the total rent be Rs. x.

Then, A's share = Rs. $\frac{72x}{325}$

$\therefore \frac{72x}{325} = 720$

$\Rightarrow x = \frac{720 \times 325}{72} = 3250$

Hence, total rent of the field is Rs. 3250.

Hence, option B is correct.

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8. Work done by A : B = 1 : 2

Time taken by A : B = 3 : 4

∴ A works 1 unit in 3 hr.

∴ 1 hr = $\frac{1}{3}$ of unit of work

∴ B works 2 units in 4 hr

∴ 1 hr = $\frac{2}{4}$ of unit of work

∴ Work done per hour = A : B = $\frac{1}{3} : \frac{1}{2} = 2 : 3$

∴ A + B can complete 5 units in 1 day

∴ A + B can complete 5 × 18 units in 18 days.

∴ Total work = 90 units

Time taken by B to complete the work = $\frac{90}{3}$ = 30 days

Hence, option C is correct.

9. 4/5 of total time in train = 2 hours.

$\therefore$ Total time in train = $\frac{5}{4} \times 2 = \frac{5}{2}$ hrs

$\therefore$ Total time spent in air = $4 - \frac{5}{2} = \frac{3}{2}$ hrs.

If 360 km is covered by air, then time taken is (4 – 2) = 2 hrs.

$\therefore$ When 3/2 hrs in spent in air, distance covered

$= \frac{360}{2} \times \frac{3}{2} = 270$ km

$\therefore$ Distance covered by train = 360 – 270 = 90 km

Hence, option C is correct.

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10. Let upstream rate = x k/hr and downstream rate = y km/hr

Then, $\frac{30}{x} + \frac{44}{y} = 10$ and $\frac{40}{x} + \frac{55}{y} = 13$

or 30y + 44v = 10

40u + 55v = 13

where $u = \frac{1}{x}$ and $v = \frac{1}{y}$

$\therefore$ x = 5 and y = 11

$\therefore$ Rate in still water = $\frac{5 + 11}{2} = 8$ km/hr

$\therefore$ Rate of current = $\frac{11 - 5}{2} = 3$ km/hr

Hence, option A is correct.