Maths Questions for CLAT Exam

CLAT Maths Quiz 28

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

1. A trader marked the price of a commodity in order to obtain the profit of 25% on the cost price, but allowed a discount of 16% on the marked price. His actual profit will be:

A. 16%

B. 25%

C. 5%

D. 9%

2. Two persons can complete a piece of work in 9 days. How many persons are needed to complete double of the same work in 12 days?

A. 5

B. 4

C. 3

D. 2

3. A can row a certain distance downstream in 6 hours & returns the same distance in 1.5 times the time taken in downstream. If stream flows at rate of 2.25 km/hr find how far he can row in an hour in still water (in km/hr).

A. 10.25

B. 11.25

C. 12.25

D. 12.50

4. Find the maximum number of trees which can be planted 20 metres apart on both the sides of a straight road 1960 meter long.

A. 152

B. 198

C. 196

D. 200

5. A man's present age is 405% of what it was 10 years ago and 500/3% of what it will be after 10 years. Calculate the present age (approximate).

A. 22 years

B. 24 years

C. 26 years

D. 28 years

6. The sum of three numbers is 116. The ratio of second to the third is 9 : 16 and first to the third is 1 : 4. The second number is

A. 30

B. 32

C. 34

D. 36

7. If the denominator of fraction is increased by 150% and the numerator is increased by 200%, then the new fraction is 3/14. Find the original fraction?

A. $\frac{4}{27}$

B. $\frac{7}{24}$

C. $\frac{5}{28}$

D. $\frac{7}{17}$

8. The simple interest on a sum of money at 4% per annum for 2 years is Rs. 120 the compound interest for same sum and same period will be

A. 122.4

B. 128

C. 135

D. 141.15

9. Tickets for all, except 100 seats, in a 10,000 seat stadium were sold. Of the tickets sold, 20% were sold at half the price and the remaining tickets were sold at full price of Rs. 40. Total revenue from ticket sale was :

A. 400000

B. 356400

C. 250000

D. 346400

10. A library has an average number of 510 visitors on sunday and 240 on other days. The average number of visitors per day in a month of so days beginning with sunday is.

A. 285

B. 295

C. 300

D. 290

Correct Answers:

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

Explanations:

1. Let CP of the commodity be Rs. 100.

So marked price = 25% of 100 + 100 = 125

As the discount of 16% is given on marked price

So, Selling price = 84% of 125

$= \frac{84}{100} \times 125 = 21 \times 5 = 105$

$\therefore$ Profit % $= \frac{SP - CP}{CP} \times 100$

$\therefore$ Profit % $= \frac{105 - 100}{100} \times 100 = 5\%$

Hence, option (C) is correct.

2. Applying the Chain rule,

$\frac{w1}{m1d1} = \frac{w2}{m2d2}$

Where,

w1 - Initial work

w2 - Double of the initial work.

m1 - No. of man persons employed initially.

m2 - No. of persons employed to do double of the initial work.

d1 - No. of days required to finish the initial work.

d2 - No. of days required to finish the double work.

$$\frac{w1}{9 \times 2} = \frac{2\ w1}{12 \times m2}$$

$$m2 = \frac{9 \times 2 \times 2}{12} = \frac{9}{3} = 3$$

So, No. of persons required to do double of the initial work = 3

Hence, option (C) is correct.

3. Let speed of A in still water = x km/hr,

Speed downstream = (x + 2.25) km/hr,

Speed upstream = (x – 2.25) km/hr

Now distance = 6 (x + 2.25) = 1.5 × 6 (x – 2.25)

On solving x = 11.25 km/hr

Hence, option (B) is correct.

4. Number of trees each side of road

$$\Rightarrow \frac{1960}{20} + 1 = 98 + 1 = 99$$

Here, we have added '1' because when the distance of 20 m is taken, two trees are to be considered. Similarly, when the distance of 40 m is taken, three trees are to be considered. So, 1 extra tree will always be calculated.

Trees on both the sides

$\Rightarrow 99 \times 2 = 198$

Hence, option (B) is correct.

5. Let present age = x years

According to question,

$$\frac{405}{100}(x - 10) = \frac{500}{300}(x+10),$$

On solving x = 23.98 = 24 years approx

Hence, option (B) is correct.

6. Combining ratios:

$\Rightarrow 9 \times 4 : 16 \times 4 : 16 \times 1$

$\Rightarrow 9 : 16 : 4 \Rightarrow$ II : III : I

Therefore, the second number is

$$\frac{9}{9 + 16 + 4} \times 116 \Rightarrow 36$$

Hence, option D is correct.

7. Let the original fraction be $\frac{p}{q}$

Given, $\frac{300\ \%\ \text{of}\ p}{250\ \%\ \text{of}\ q} = \frac{3}{14}$

Therefore, $\frac{p}{q} = \frac{5}{28}$

Hence, option (C) is correct.

8. **Smart Approach:** If the SI on a certain sum for 2 years at r% be Rs. S, then the CI will be:

$$\left[\frac{r + 200}{200}\right] \times S$$

Putting the values, we get

$$CI = \left(\frac{4 + 200}{200}\right) \times 1500 = 122.4\ /-$$

Traditional Approach:

SI of 2 year = 120

So, SI for 1 year = 60

$$SI = \frac{P \times R \times T}{100}$$

$$60 = \frac{P \times 4 \times 1}{100}$$

$$\frac{60 \times 100}{4} = P = 60 \times 25 = 1500$$

Now, the net effective rate of interest for CI for 2 years

$$= \left[4 + 4 + \frac{4 \times 4}{100}\right]\%$$

= 8.16% {Appying the net% effect formula}

∴ Interest earned = 1500 × 8.16%% = 122.4/-

Hence, option A is correct.

9. Total ⇒ 9900 tickets were sold

Revenue ⇒ 20% of 9900 × half price + 80% of 9900 × full price

$$\Rightarrow \frac{20}{100} \times 9900 \times 20 + \frac{80}{100} \times 9900 \times 40$$

⇒ 9900 × 4 + 9900 × 32

⇒ 9900 (4 + 32)

⇒ 9900 × (36)

⇒ 3600 × 99

⇒ 356400

Hence, option B is correct.

10. As the month have 30 days and is started with first day as sunday.

∴ There are 5 Sunday in this month.

So, on 5 days = 510 visitors

on 25 days = 240 visitors.

Average visitors daily = $\frac{5 \times 510 + 25 \times 240}{30}$

$\Rightarrow \frac{2550 + 6000}{30}$

$\Rightarrow 285$

Hence, option A is correct.