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## Maths Questions for CLAT Exam.

CLAT Maths Quiz 47

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

1. Evaluate : $777-\frac{243}{42} \times 51-42$
A. 538.68
B. 678.98
C. 439.93
D. 772.27
2. The difference between two numbers is $\mathbf{2 5 0 0}$. When the larger number is divided by the smaller number, the quotient is 8 and the remainder is 50 . The smaller number is
A. 250
B. 280
C. 350
D, 400
3. The average of ten numbers is 7 . Each number is multiplied by 12 , then 6 is added to each number, and at last each number is divided by 15 . The average of new set of numbers is
A. 6
B. 9
C. 10
D. 15
4. In the year 2000, expenditure of company A was 5 million. If in year 2001, expenditure of company A was 5.23 million, then what was the percentage change in the expenditure?
A. $5.8 \%$
B. $4.6 \%$
C. $4.9 \%$
D. $6.4 \%$
5. Rahul borrowed Rs. 830 from Mr. Lal at the rate of $12 \%$ p.a. SI for 3 years. He then added some money to the borrowed sum and lent it to Shobha for the same period at the rate of $14 \%$ p.a. interest. If Rahul gains Rs. 93.90 in the whole transaction, what amount did he add from his side?
A. Rs. 115
B. Rs. 120
C. Rs. 125
D. Rs. 105
6. A property dealer purchases two flats for Rs. 60 lakhs. He sells one at a loss of $5 \%$ and the other at a gain $10 \%$. He looses $10 \%$ in the entire transaction. What is the cost of each flat?
A. Rs. 50 lakhs
B. Rs. 48 lakhs
C. Rs. 54 lakhs
D. Rs. 46 lakhs
7. $A$ and $B$ undertake a piece of work for Rs. 600 . A alone can complete it in 6 days, while $B$ alone can complete it in 8 days. With the help of $C$, then finish it in $\mathbf{3}$ days. Find $B$ 's share.
A. Rs. 250
B. Rs. 245
C. Rs. 225
D. Rs. 260
8. A train running at $54 \mathrm{~km} / \mathrm{hr}$ takes $\mathbf{2 0} \mathrm{sec}$ to cross a platform and $\mathbf{1 2} \mathrm{sec}$ to pass a man walking in the same direction at a speed of $6 \mathrm{~km} / \mathrm{hr}$. Find the length of the train and the platform.
A. 140 m
B. 180 m
C. 165 m
D. 172 m
9. A group of 10 teachers which includes Jones. Rao and Anil wishes to select a committee containing is selected at random. What is the probability that the committee selected Jones and Rao, if it contains Anil?
A. $\frac{1}{36}$
B. $\frac{1}{20}$
C. $\frac{1}{3}$
D. $\frac{1}{10}$
10. A plane at a height of 3125 m from the ground passed another plane which is vertically upward to the plane. If angle of elevation to these two planes from a certain point on the ground is $30^{\circ}$ and $60^{\circ}$ respectively, then what is the vertical distance between these two planes?
A. 6050 m
B. 6110 m
C. 6250 m
D. 6300 m

## Correct Answers:

| $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C | C | A | B | D | B | C | A | A | C |

## Explanations:

1. 

$$
\begin{aligned}
& 777-\frac{243}{42} \times 51-42=777-\frac{243}{14} \times 17-42 \\
& =777-\frac{4131}{14}-42=777-295.07-42 \\
& =777-337.07=439.93
\end{aligned}
$$

Hence, option C is correct.
2. Let the numbers be ' $n$ ' and $2500+n /$

Then, $2500+\mathrm{n}=8 \mathrm{n}+50$ and $\mathrm{n}=350$
Hence, option C is correct.
3. We know, if an operation is performed to all the numbers, then the avearge of the numbers changes accordingly.
$\Rightarrow$ Revised average $=\frac{(\text { Original average }) \times 12+6}{15}$
$=\frac{84+6}{15}=6$
Hence, option A is correct.
4. Expenditure in year $2000=5$ million

Expenditure in year $2001=5.23$ million
$\Rightarrow$ Percentage change $=\frac{5.23-5}{5} \times 100$
$=\frac{0.23}{5} \times 100=4.6 \%$
Hence, option B is correct.
5.

$$
\frac{(830+x) \times 14 \times 3}{100}-\frac{830 \times 12 \times 3}{100}=93.90
$$

$\Rightarrow 830 \times 42+42 x-830 \times 36=9390$
$\Rightarrow 42 x+830 \times(42-36)=9390$
$\Rightarrow 42 x=9390-4980 \Rightarrow x=\frac{4410}{42}=105$
$\therefore$ Amount added $=$ Rs. 105
Hence, option D is correct.
6. Using alligation

$\mathrm{C}_{1}$ and $\mathrm{C}_{2}$ are the cost of two flat.
$\because \frac{C_{1}}{C_{2}}=\frac{-5+10}{10+10}=\frac{5}{20}=\frac{1}{2} \Rightarrow C_{1}=\frac{1}{5} \times 6000000$
$=$ Rs. 12 lakhs and $\mathrm{C}_{2}=$ Rs. 48 lakhs
Hence, option B is correct.
7.

C's 1 day's work $=\frac{1}{3}-\left(\frac{1}{6}+\frac{1}{8}\right)=\frac{1}{24}$

Ratio of work done in 1 days for A : B : C
$=\frac{1}{6}: \frac{1}{8}: \frac{1}{24}=4: 3: 1$

B's share $=\frac{600 \times 3}{8}=$ Rs. 225

Hence, option C is correct.
8. Let the length of the train be $x$ and the length of the platform by $y$.

Speed of the train relative to the $\mathrm{man}=48 \mathrm{~km} / \mathrm{hr}=\frac{40}{3} \mathrm{~m} / \mathrm{sec}$

While passing the man, the train covers its own length with relative speed.
Length of the train $=\frac{40}{3} \times 12=160 \mathrm{~m}$

Since speed of the train $=54 \mathrm{~km} / \mathrm{hr}=15 \mathrm{~m} / \mathrm{sec}$
$\therefore \frac{\mathrm{x}+\mathrm{y}}{15}=20 \Rightarrow \mathrm{x}+\mathrm{y}=300 \Rightarrow \mathrm{y}=140$.

Length of the platform $=140 \mathrm{~m}$.

Hence, option A is correct.
9. The total number of teachers $=10$

The number of members in committee $=3$
It must contain Anil
$\therefore$ Remaining number of members $=2$
The number of ways Jones and Rao selected $={ }^{2} C_{2}=1$
Randomly the number of ways is 2 persons can be selected from remaining 9 persons $={ }^{9} \mathrm{C}_{2}$
$=\frac{9 \times 8}{2}=36$
$\therefore$ Probability to select with the committee with Rao and Jones $=\frac{1}{36}$

Hence, option A is correct.
10. Let the distance between planes be h and and point C is $\mathrm{x} m$ away from the point O .

In $\triangle \mathrm{ACO}$.

$\frac{3125}{x}=\tan 30^{\circ}$
$\Rightarrow \mathrm{x}=3125 \mathrm{~V} 3 \mathrm{~m}$
and in $\triangle B C O$.


Hence, option C is correct


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