Maths Questions for CLAT Exam.

CLAT Maths Quiz 45

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

1. $\frac{2+3\div2\times(2-3)\times2+3\div2\times3}{2-3\div2\times(3-2)-3+2\times3\div2-2}=?$

A. $-\frac{4}{3}$ B. $\frac{7}{3}$ C. $\frac{4}{3}$ D. $-\frac{7}{3}$

2. The product of the LCM and the HCF of two numbers is 24. If the difference of the numbers is 2, then the greater of the numbers is

A. 3 B. 4 C. 6 D. 8

3. The average of seven number is 18. If one of the numbers is 17 and it is replaced by 31, then the average becomes.

A. 19.5 B. 20 C. 21 D. 21.5

4. Salaries of A, B and C are in the ratio 1 : 2 : 3. Salary of B and C together is Rs. 6000. By what percent is the salary of C more than that of A?

A. 100% B. 200% C. 150% D. 110%

5. For how many years should Rs. 600 be invested at the rate of 10% p.a. in order to earn the same simple interest as is earned by investing Rs. 800 at 12% p.a. for 5 years?

A. 4 years B. 6 years C. 8 years D. 7 years

6. The ratio in which 30% alcohol solution should be mixed with 50% solution in order to get a 42% solution is

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

7. A can complete a piece of work in 7 days of 9 hrs each and B can complete it in 6 days of 7 hrs each. How long will they take to complete the work together if they work for 42/5 hr a day?

A. 3 days B. 2 days C. 4 days D. 3.5 days

8. A man covers a certain distance between his house and office on scooter. Having an average speed of 30 km/hr, he is late by 10 min. However, with a speed of 40 km/hr, he reaches his office 5 min earlier. Find the distance between his house and office.

A. 10 km B. 15 km C. 30 km D. 25 km

9. A card is drawn at random from a normal pack of cards. The probability that it is either a spade or a queen is

A. $\frac{15}{52}$ B. $\frac{4}{13}$ C. $\frac{17}{52}$ D. $\frac{9}{26}$

10. The length of a rectangular field is 3 times of its width. If the perimeter of the field is 24 m, then find the area of the field.

A. $27m^2$ B. $29\ m^2$ C. $25\ m^2$ D. $23\ m^2$

Correct Answers:

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

Explanations:

1. $\frac{2+3\div2\times(2-3)\times2+3\div2\times3}{2-3\div2\times(3-2)-3+2\times3\div2-2}=?$

$=\frac{2+3\div2\times(-1)\times2+3\div2\times3}{2-3\div2\times(1)-3+2\times3\div2-2}$

$=\frac{2+\frac{3}{2}\times(-1)\times2+\frac{3}{2}\times3}{2-\frac{3}{2}\times1-3+2\times\frac{3}{2}-2}$

$=\frac{2-3+\frac{9}{2}}{2-\frac{3}{2}-3+3-2}=\frac{-1+\frac{9}{2}}{-\frac{3}{2}}=\frac{\frac{7}{2}}{-\frac{3}{2}}=-\frac{7}{3}$

Hence, option D is correct.

2. Let the number be a and b.

$\therefore a \times b = 24$

and $a - b = 2$

$\therefore a = 6$

and $b = 4$

$\therefore$ The greater number is 6.

Hence, option C is correct.

3.

Reqd. average = $18 + \frac{31 - 17}{7} = 18 + 2 = 20$

Hence, option B is correct.

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4. Let A's salary be x, B's salary be 2x and C's salary be 3x.

Percentage by which C's salary is more than that of A's salary

$= \frac{2x}{x} \times 100 = 200\%$

Hence, option B is correct.

5.

SI required = $\frac{800 \times 12 \times 5}{100}$ = Rs. 480

Time = $\left(\frac{100 \times 480}{600 \times 10}\right)$ = 8 years

Hence, option C is correct.

6.

30 50

\ /

42

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50 – 42 42 – 30

$\Rightarrow$ Reqd. ratio = $\frac{50 - 42}{42 - 30} = 2 : 3$

Hence, option D is correct.

7. A takes $7 \times 9 = 63$ hr,

$\therefore$ In 1 hr A does $= \frac{1}{63}$ of work

B takes $6 \times 7 = 42$ hr.

$\therefore$ In 1 hr B does $= \frac{1}{42}$ of work

A & B do in 1 hr $= (\frac{1}{63} + \frac{1}{42})$ of work

A & B do in 42/5 hr $= (\frac{1}{63} + \frac{1}{42}) \times \frac{42}{5}$

$= \frac{105}{63 \times 42} \times \frac{42}{5} = \frac{21}{63} = \frac{1}{3}$ of work

$\therefore$ Number of days required to finish the work $= \frac{1}{\frac{1}{3}} = 3$ days

Hence, option A is correct.

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8. Let the distance be x km.

Time taken to cover x km at 30 km/hr $= \frac{x}{30}$ hrs.

Time taken to cover x km at 40 km/hr $= \frac{x}{40}$ hrs.

Difference between the time take = 15 min $= \frac{1}{4}$ hr.

$\therefore \frac{x}{30} - \frac{x}{40} = \frac{1}{4} \Rightarrow 4x - 3x = 30 \Rightarrow x = 30$

Hence, the required distance is 30 km.

Hence, option C is correct.

9. $n(S) = {}^{52}C_1$

$n(E_1) = {}^{13}C_1$: $n(E_2) = {}^{4}C_1$ and $n(E_1 \cap E_2) = {}^{1}C_1$

By addition theorem on probability ;

$P(E_1 \cup E_2) = P(E_1) + P(E_2) - P(E_1 \cap E_2)$

$= \frac{13 + 4 - 1}{52} = \frac{16}{52} = \frac{4}{13}$

Hence, option B is correct.

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10. $2(l + b) = 24$

$\Rightarrow 2(3b + b) = 24$

$\Rightarrow 8b = 224$

$\Rightarrow b = 3$ m and $l = 9$m

So, area of the field = $l \times b$

$= 3 \times 9 = 27m^2$

Hence, option A is correct.