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Mixed Maths Questions for LIC AAO Exam.

LIC AAO Maths Quiz 11

Direction: Study the following questions carefully and choose the right answer.

1. A sum of money becomes 5 times of itself in 25 years at simple interest. If Rs. 12500 was invested at the same rate of interest for two years, compounded annually then what would have been the compound interest?

- A. Rs. 4320 B. Rs. 4325 C. Rs. 4330 D. Rs. 4350 E. None of these

2. Two persons, A and B can complete a piece of work in 21 days and the respective ratio of A's and B's efficiency is 2 : 1. If A work at 37.5% more than his efficiency and B work at 25% less than his efficiency then in how many days can they complete the same piece of work?

- A. 16 days B. 17 days C. 20 days D. 19 days E. None of these

3. Four Onion and four potato are kept in a box. A boy picks out two things from the box at random. Find the probability that one is Onion and another one is Potato?

- A. $\frac{2}{7}$ B. $\frac{5}{7}$ C. $\frac{3}{7}$ D. $\frac{4}{7}$ E. None of these

4. The average weight of 10 persons was increased by 2.5 kg when Ram comes in place of Mohan but if Sohan comes in place of Mohan then the average weight of the 10 persons was increased by 3.5 kg. If the weight of Mohan is 55 kg then what is the average weight of Ram, Mohan, and Sohan?

- A. 65 kg B. 70 kg C. 75 kg D. 80 kg E. None of these

5. Mohan, Sohan and Sunil enter into a partnership with a capital in which Mohan's contribution is Rs. 17400. If out of a total profit of Rs. 1500, Mohan gets Rs. 750 and Sohan gets Rs. 500, then Sohan's capital is?

- A. Rs. 11600 B. Rs. 5800 C. Rs. 12600 D. Rs. 6300 E. None of these

6. If the respective ratio of the speed of two persons, A and B is 4 : 5. If A can complete a distance of 240 km in 25 minutes then find speed of B?

- A. 720 km per hour B. 710 km per hour C. 755 km per hour D. 733 km per hour E. None of these

7. When a number is divided by 34 then the remainder is 24. Find the remainder when the same number is divided by 17?

- A. 9 B. 11 C. 6 D. 7 E. None of these

8. A dealer marked the price of an item 20% above cost price. He allowed two successive discount of 10% and 20% to a customer as a result he incurred a loss of Rs. 544. What is the cost price(in Rs.) of the item?

- A. 4500 B. 3600 C. 4000 D. 4200 E. None of these

9. Piyush invested an amount of Rs. 60000 to start a software business. After six months, Kamal joined him with an amount of Rs. 90000. After one year from the commencement of the business, Piyush put in an additional amount of Rs. 20000. At the end of 3 yr, they earned a profit of Rs. 7120000. What is Piyush's share in the profit?

- A. Rs. 3520000 B. Rs. 3650000 C. Rs. 3440000 D. Rs. 4140000 E. None of these

10. The ratio between the speed of a train and a car is 18 : 3 respectively. Also, a bus covered a distance of 480 kms in 12 hours. The speed of the bus is five-ninths the speed of the train. How much distance will the car cover in 5 hours?

- A. 150 kms B. 180 kms C. 160 kms D. Can't be determined E. None of these

Correct Answers:

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

Explanations:

1. Let the sum of money = x then interest = $5x - x = 4x$

$$SI = \frac{P \times R \times T}{100}, 4x = \frac{X \times R \times 25}{100}, R = 16\%$$

$$CI \text{ on Rs. } 12500 \text{ for } 2 \text{ years @ } 16\% \text{ per annum} = 12500 \left(1 + \frac{16}{100}\right)^2 - 12500 = 4320$$

Hence, option A is correct.

2. Let the efficiency of A = $2x$ and the efficiency of B = x

A and B complete a piece of work in 21 days then the total units of work = $(2x + x) \times 21$ units = $3x \times 21$ units

If A work at 37.5% more than his efficiency then A efficiency will become $(100 + 37.5)\%$ of $2x = 2.75x$

If B works 25% less than his efficiency then his efficiency will become 75% of $x = 0.75x$

If they work together then the total units of work in one day = $(2.75x + 0.75x) = 3.5x$

The total time taken by them to do $3x \times 21$ units of work = $3x \times \frac{21}{3.5} = 18$ days

Hence, option E is correct.

3. Total probability = ${}^8C_2 = 28$

Probability that one is Onion and another one is Potato = ${}^4C_1 \times {}^4C_1 = 16$

Hence, reqd. probability = $\frac{16}{28} = \frac{4}{7}$

Hence, option D is correct

4. Let the average weight of 10 persons is x kg

Then the sum of the weight of 10 persons = $10x$ kg

Let the Ram's weight is R and Sohan's weight is S then

Case I: When Ram comes in place of Mohan

$$10x - 55 + R = 10(x + 2.5)$$

$$R = 10 \times 2.5 + 55 = 25 + 55 = 80 \text{ kg}$$

Case II: When Sohan comes in place of Mohan

$$10x - 55 + S = 10(x + 3.5)$$

$$S = 35 + 55 = 90 \text{ kg}$$

The average weight of Ram, Mohan, and Sohan = $\frac{80 + 55 + 90}{3} = \frac{225}{3} = 75$ kg

Hence, option C is correct.

5. Ratio of profit of Mohan, Sohan and Sunil = 750 : 500 : 250 = 3 : 2 : 1
Let their capitals be Rs. 3x, Rs. 2x and Rs. x respectively.

Then, $3x = 17400$

$$x = \frac{17400}{3} = \text{Rs. } 5800$$

Hence, Sohan capital = $2x = 2 \times 5800 = \text{Rs. } 11600$

Therefore, option A is correct.

6. Let the speed of A = 4x km per hour and the speed of B = 5x km per hour

$$\text{The speed of A} = 4x = \frac{240}{\frac{25}{60}} = 576 \text{ km per hour}$$

Therefore, $x = 144$ km per hour

Then, the speed of B = $5x = 5 \times 144 = 720$ km per hour

Hence, option A is correct.

7. When the number is divided by 34 the remainder is 24.

It means the number is $34x + 24$

As $34x$ is always divisible by 24 so, the remainder of $(34x + 24)$ when divided will be same as when 24 is divided by 17

24 divided by 17 gives a remainder of 7

Hence, option D is correct.,

8. CP = Rs. 100x

MP = Rs. 120x

After 2 successive discount which is,

10% and 20% so it will be 90% and 80%,

Then,

$$SP = 120 \times \frac{90}{100} \times \frac{80}{100} = \text{Rs. } 86.4x$$

Loss = Rs. $(100 - 86.4) = \text{Rs. } 13.6x$

Loss = 544

Then $544 = 13.6x$

$$x = \frac{544}{13.6} = 40$$

CP = Rs. $100x = \text{Rs. } 4000$

Hence, option C is correct.

9. Equivalent capital of Piyush for 3 yr = Rs. $(60000 \times 1 + 80000 \times 2)$ = Rs. $(60000 + 160000)$ = Rs 220000

Equivalent capital of Kamal for 3 yr

$$= \text{Rs. } 90000 \times 2 \frac{1}{2} = \text{Rs. } 90000 \times \frac{5}{2} = \text{Rs. } 225000$$

Ratio of capitals = 220000 : 225000 = 44 : 45

Sum of the ratios = 44 + 45 = 89

Total profit = Rs. 7120000

$$\text{Piyush's share} = \text{Rs. } \frac{44}{89} \times 7120000 = \text{Rs. } 3520000$$

Hence, option A is correct.

10. Let speed of train and bus be $18x$ and $3x$ respectively.

Speed of bus = $480/12 = 40$ km/hr

As speed of bus is five ninths the speed of train so,

$$\text{Speed of train} = \frac{9}{5} \times \frac{480}{12} = 72 \text{ km/hr}$$

$$\text{Speed of car} = 72 \times \frac{3}{18} = 12 \text{ km/hr}$$

Distance covered by car in 5 hrs = $12 \times 5 = 60$ kms.

Hence, option E is correct.



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