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# Mixed Maths Questions for LIC AAO Pre Exam

## LIC AAO Quant Quiz 1

Directions: Read the following questions carefully and choose the right answer.

**1. Shyam and Ram entered into a partnership with investment in the ratio 3 : 2 respectively. Among them, Ram is the working partner for which he gets 10% of the profit and Shyam is the sleeping partner. If at the end of one year they earned a profit of Rs. 75000 out of which 5% goes to the charity. Find the share of Ram in the profit.**

A. Rs. 32000

B. Rs. 33000

C. Rs. 31000

D. Rs. 35000

E. None of these

**2. An alloy of aluminium, copper and Iron contains 85% aluminium, 8% copper and 7% iron. A second alloy of aluminium and iron melted with the first and the mixture then contains 75% aluminium, 5% copper and 20% iron. Find the percentage of aluminium in the second alloy.**

A. 49.4%

B. 58.33%

C. 53.75%

D. 62.6%

E. None of these

**3. The simple interest on a certain sum for 2 years at a certain rate of interest is Rs.2000 and compound interest on the same sum, same time and same rate of interest is Rs.2050. Then find the ratio between CI for 2 years and CI for 3 years?**

A. 820 : 1361

B. 820 : 1261

C. 1261 : 820

D. 1361 : 820

E. None of these

**4. If four coins are tossed together, what is the probability of at least getting 2 heads?**

A. 13/16

B. 11/16

C. 9/16

D. 15/16

E. None of these

**5. A fruit vendor sells apples and oranges and gets equal revenue from each. He gets a profit of 20% on each apple and a profit of 25% on each orange. If the ratio of the number of oranges sold to the number of apples sold is 3 : 2, what is the ratio of the cost price of an orange to that of an apple?**

A. 25 : 16

B. 16 : 25

C. 36 : 25

D. 49 : 36

E. 36 : 49

**6. There are three members in a family – husband, wife and their son. Husband's age is thrice his son's age and wife is three years younger than his husband. What is the respective ratio of ages of son, husband and wife if their average age is 41?**

A. 17 : 9 : 18

B. 15 : 4 : 12

C. 6 : 18 : 17

D. 4 : 12 : 15

E. None of these

**7. There are 3 points P, Q and R in a straight line, such that point Q is equidistant from points P and R. A man can swim from point P to R downstream in 24 hours and from Q to P upstream in 16 hours. Find the ratio of speed of man in still water to speed of stream?**

A. 5 : 1

B. 6 : 1

C. 5 : 3

D. 7 : 1

E. None of these

**8. In a 1500 m race, Chaitali beats Vrunali by 100 m and in 1200 m race, Vrunali beats Krutika by 75 m. If Chaitali and Krutika are compared, then for how much m Chaitali will beat Krutika in 900 m race?**

A. 115 m

B. 112.5 m

C. 110 m

D. 120 m

E. 135 m

**9. 20 men, 12 women and 18 boys were given a project of doing 3960 designs of a building in 5 days. The ratio of the number of designs made by them respectively in 1 day is 3 : 2 : 1. If on the 1st day all of them worked, on the 2nd day 4 women and 6 boys went absent and on the 3rd day, 6 men and 10 boys went absent but still the work got finished on the 3rd day. Then find the number of designs designed by them on the 3rd day?**

A. 1021

B. 1110

C. 1621

D. 1210

E. None of these

**10. In a maths test, Anil got 414 marks which was 47 less than Barun's marks. The marks of Chandan were 48% of the sum of Anil and Barun's marks together or 52.5% of the total marks. If the marks of Dinesh was 32 more than that of Chandan's marks. Find how much percent did Dinesh get in that examination?**

A. 55.5%

B. 54.5%

C. 51.5%

D. 48.5%

E. None of these

### Correct answers:

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

### Explanations:

1.

$$\text{Amount goes to charity} = \frac{5}{100} \times 75000 = \text{Rs. } 3750$$

Amount goes to Ram as a working partner

$$= \frac{10}{100} \times 75000 = \text{Rs. } 7500$$

$$\text{Remaining amount} = \text{Rs. } (75000 - 3750 - 7500) = \text{Rs. } 63750$$

$$\text{Share of Ram in the remaining profit} = \frac{2}{5} \times 63750 = \text{Rs. } 25500$$

$$\text{Total share of Ram} = \text{Rs. } (7500 + 25500) = \text{Rs. } 33000$$

Hence, option B is correct.

2.

Let  $x$  and  $y$  be the mass of 1st alloy and 2nd alloy.

$$\text{aluminium in the 1st alloy} = \frac{85x}{100}$$

$$\text{copper in the 1st alloy} = \frac{8x}{100}$$

$$\text{iron in the 1st alloy} = \frac{7x}{100}$$

According to question, for copper

$$\frac{8x}{\frac{100}{x+y}} \times 100 = 5$$

$$8x = 5x + 5y$$

$$3x = 5y$$

$$\frac{x}{y} = \frac{5}{3}$$

$$x = 5 \text{ and } y = 3$$

Let  $p$  = percentage of aluminium in the 2nd alloy

According to question,

$$5 \times \frac{85}{100} + 3 \times \frac{p}{100} = (5 + 3) \times \frac{75}{100}$$

$$3p = 175$$

$$p = \frac{175}{3} = 58.33\%$$

Hence, option (B) is correct.

**3.**

SI for 2 years = Rs.2000

SI for 1 year = Rs.1000

In the 2nd year Rs.50 is added in CI which is 5% of 1000

Hence,  $R = 5\%$

$$\Rightarrow 5\% = 1000$$

$$\Rightarrow 100\% = 20000$$

Sum = Rs.20000

$$\text{CI for 3 years} = 20000 \left(\frac{105}{100}\right)^3 - 20000$$

$$\Rightarrow 23152.5 - 20000$$

$$\Rightarrow 3152.5$$

Required ratio = 2050 : 3152.5

$$\Rightarrow 20500 : 31525$$

$$\Rightarrow 820 : 1261$$

Hence, option B is correct.

**4.**

$P(\text{getting at least 2 heads}) = 1 - P(\text{getting no head or exactly one head})$

$$P(\text{getting no head}) = P(\text{getting all tails}) = \frac{1}{16}$$

Now,  $P(\text{exactly one head}) :$

Getting exactly one head means 3 tails and 1 head in any order and the total occurrences here are

$$= \frac{4!}{3!} = 4$$

Therefore, P(getting exactly one head)

$$= \frac{4}{16} = \frac{1}{4}$$

Hence, P(getting at least 2 heads)

$$= 1 - \left( \frac{1}{16} + \frac{1}{4} \right) = \frac{11}{16}$$

Hence, option B is correct.

5.

Let P be revenue from each apple and orange.

$$\text{Cost of apples} = P \times \frac{100}{120} = \frac{5P}{6}$$

$$\text{Cost of oranges} = P \times \frac{100}{125} = \frac{4P}{5}$$

Let the number of apples sold by the fruit vendor be  $2n$ , then the number of oranges sold would be  $3n$ .

$$\text{Cost price of each apple} = \frac{1}{2n} \times \frac{5P}{6} = \frac{5P}{12n}$$

$$\text{Cost price of each orange} = \frac{1}{3n} \times \frac{4P}{5} = \frac{4P}{15n}$$

$$\text{Therefore, reqd. ratio} = \frac{4P}{15n} : \frac{5P}{12n} = 16 : 25$$

Hence, option B is correct.

6.

Let son's age =  $x$

Husband's age =  $3x$

Wife's age =  $3x - 3$

According to question-

$$\Rightarrow x + 3x + (3x - 3) = 41 \times 3$$

$$\Rightarrow 7x = 126$$

$$\Rightarrow x = 18$$

Son's age = 18 years

Husband's age =  $18 \times 3 = 54$  years

Wife's age =  $18 \times 3 - 3 = 51$  years

Required ratio =  $18 : 54 : 51 = 6 : 18 : 17$

Hence, option C is correct.

7.

Let speed of man in still water =  $x$  km/h

Speed of current =  $y$  km/h

Downstream speed =  $(x + y)$  km/h

Upstream speed =  $(x - y)$  km/h

Let  $PQ = QR = A$  and  $PR = 2A$

So,

$$\frac{2A}{x+y} = 24 \text{ and } \frac{A}{x-y} = 16$$

By dividing both equations-

$$\Rightarrow \frac{2A(x-y)}{A(x+y)} = \frac{24}{16}$$

$$\Rightarrow 4x - 4y = 3x + 3y$$

$$\Rightarrow \frac{x}{y} = \frac{7}{1}$$

Required ratio = Speed of man in still water : Speed of current

$$\Rightarrow 7 : 1$$

Hence, option D is correct.

**8.**

Chaitali can beat Vrunali by 100 m in 1500 m race.

Hence, when Chaitali covers 1500 m, Vrunali covers 1400 m.

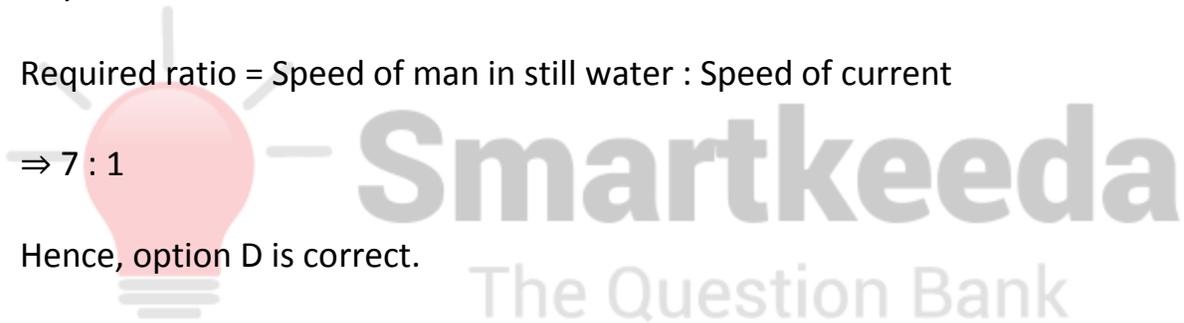
So when Chaitali covers 900 m, Vrunali will cover 840 m.

Similarly, when Vrunali covers 1200 m, Krutika covers 1125 m.

So, when Vrunali covers 840 m, Krutika will cover 787.5 m.

∴ Chaitali will beat Krutika by 112.5 m.

Hence, option B is correct.



9.

Let the number of designed by men, women and boys in 1 day be  $3x$ ,  $2x$  and  $x$  respectively.

Designs of building on the 1st day

$$\Rightarrow 20 \times 3x + 12 \times 2x + 18 \times x$$

$$\Rightarrow 102x$$

$$\text{On the 2}^{\text{nd}} \text{ day} = 20 \times 3x + 8 \times 2x + 12 \times x = 88x$$

$$\text{On the 3}^{\text{rd}} \text{ day} = 14 \times 3x + 12 \times 2x + 8 \times x = 74x$$

$$\text{Now, } 102x + 88x + 74x = 3960$$

$$\Rightarrow 264x = 3960$$

$$\Rightarrow 74x = \frac{3960}{264} \times 74$$

$$\Rightarrow 74x = 1110$$

Hence, option B is correct.

10.

$$\text{Barun's marks} = 414 + 47 = 461$$

$$\text{The sum of Anil's and Barun's marks} = 414 + 461 = 875$$

$$\text{Chandan Marks} = 48\% \text{ of } 875 = 420 = 52.5\% \text{ of the total marks} = 52.5\% \text{ of } x$$

(let the total marks is  $x$ )

$$\text{By solving, } x = \text{total marks} = 800$$

Dinesh's marks =  $420 + 32 = 452$

$$\text{Reqd. \%} = \frac{452 \times 100}{800} = 56.5\%$$

Hence, option E is correct.



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