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Mixed Maths Questions for SBI PO Pre, IBPS PO Pre, IBPS Clerk Mains and SBI Clerk Mains Exams.

Bank PO Maths Quiz 14

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

1. The average number of chocolates that some number of boys have is 240 and average number of chocolates that some number of girls have is 180. If each of the boys eat 10 chocolates then the average number of chocolates with all the students become 200. The total number of boys is what percentage of the total number of students?

- A. 75% B. 40% C. 60% D. 62.5% E. None of these

2. A, B and C start a business. A invests four times as much as B invests and the investment of C was x% less than that of B. At the end of one – year, out of total profit of Rs. 5700, A's share was Rs. 4000. What was the difference between B's share and that of C's share?

- A. Rs. 1200 B. Rs. 1500 C. Rs. 200 D. Rs. 300 E. None of these

3. A container 'P' contains milk and water in the ratio of 4 : 5 respectively and another container 'Q' contains milk and water in the ratio of 3 : 2 respectively. If both the containers are emptied into a larger container R , then what would be the ratio of water and milk in the larger container?

- A. 33 : 32 B. 43 : 47 C. 47 : 43 D. 37 : 34 E. None of these

4. Two friends Ram and Sham appear in an interview . There is 25% probability that Ram can be selected and 20% probability that Sham can be selected , then what is the probability that none of them get selected?

- A. 85% B. 40% C. 62.5% D. 60% E. None of these

5. The height of a cylindrical shaped wood is 15 cm less than its circumference of the base and the curved surface area is 154 cm^2 , then what is the volume (in cm^3) of the cylinder shaped wood?

- A. 289.5 B. 269.5 C. 462 D. 462.5 E. None of these

6. The sum of the digits of unit's and ten's place of a two-digit number is 15 and their difference is 1. When the number was divided by 17, the remainder is 10. What would be the remainder, when the number was divided by 15?

- A. 2 B. 4 C. 7 D. 5 E. None of these

7. An examination consists only two subjects - Maths and English. Sushil got 112 marks in Maths, which is 62 more than the minimum passing marks of that subject and he got 40% marks in English, which is 30 less than the minimum passing marks of that subject. If the overall minimum passing percentage in the examination was 40%, then what was the minimum passing percentage in Maths paper only?

- A. 50% B. 45% C. 40% D. 25% E. None of these

8. The average speed of a tractor is four – fifth of the average speed of a bus. Both vehicles start simultaneously from Bangalore at 09 : 00 AM and reach Chennai together at 06 : 00 PM on the same day. For bus, one halt was scheduled on the way. For how long (in minutes) was the halt scheduled?

- A. 112 B. 108 C. 72 D. 90 E. None of these

9. In downstream, two steamers A and B start simultaneously from the point P but the steamer B reaches point Q, 2 hours before the steamer A reaches the same point. If the distance between point P and Q is 120 km and the speed of steamer B in upstream is 3 km per hour more than that of steamer B in upstream and the speed of stream is 2 km per hour, then find the sum of the speed of steamer A in still water and that of steamer B in still water?

- A. 21 km per hour B. 20 km per hour C. 23 km per hour D. 27 km per hour E. None of these

10. The ratio of length to breadth of a rectangular shaped room is 3 : 4. The length of longest pole that can be placed on the floor of the room is 25 cm. What will be the total cost of cementing the floor of the room at the rate of Rs. 5 per sq. cm?

- A. Rs. 1200 B. Rs. 1500 C. Rs. 960 D. Rs. 1800 E. None of these

Correct Answers:

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

Explanations:

1. Let the number of boys = x and the number of girls = y

The total number of chocolates the boys have = $240x$

The total number of chocolates the girls have = $180y$

If each of the boys eat 10 chocolates then the remaining number of chocolates, the boys will have = $240x - 10x = 230x$

The sum of the all the chocolates = $200(x + y) = 230x + 180y$

$$20y = 30x$$

$$x : y = 2 : 3$$

$$\text{The reqd. percentage} = \frac{2 \times 100}{5} = 40\%$$

Hence, option B is correct.

2. Let the investments of B = Rs. $100a$ then the investments of A = $4 \times 100a = \text{Rs. } 400a$

The investments of C = $(100 - x) \%$ of $100a = \text{Rs. } (100a - ax)$

The ratio of their investments = $400a : 100a : 100a - ax = 400 : 100 : 100 - x$

Let us assume that total profit = $400b + 100b + 100b - bx = 5700$

$$A's \text{ share} = \frac{4000}{5700} = \frac{40}{57} = \frac{400}{600 - x}$$

$$600 - x = 570$$

$$600 - 570 = x$$

$$x = 30$$

The ratio of profit = $400 : 100 : 100 - 30 = 400 : 100 : 70 = 40 : 10 : 7$

$$\text{The difference between B's share and C's share} = \frac{3 \times 5700}{57} = 300$$

Hence, option D is correct.

Alternate Method:-

A's share = Rs. 4000

Therefore B's share = Rs. 1000 [As Ratio of Investment of A : B = 4 : 1 , so the ratio of their profit will be = 4 : 1]

Therefore C's share = Rs $(5700 - 5000) = \text{Rs. } 700$

Difference between B's and C's share = Rs. $(1000 - 700) = \text{Rs. } 300$

Hence, option D is correct.

3.

The quantity of milk in the container P = $\frac{4}{9}$

The quantity of water = $\frac{5}{9}$

In the container Q,

The quantity of milk = $\frac{3}{5}$

The quantity of water = $\frac{2}{5}$

When both the container are emptied into a larger container

The ratio of milk to water = $(\frac{4}{9} + \frac{3}{5}) : (\frac{5}{9} + \frac{2}{5}) = 47 : 43$

So, the ratio of water to milk = 43 : 47

Hence, option B is correct.

4.

Ram's probability of getting selected = 25% = $\frac{1}{4}$

Sham probability of getting selected = 20% = $\frac{1}{5}$

The probability of Ram not getting selected = $1 - \frac{1}{4} = \frac{3}{4}$

The probability of Sham not getting selected = $1 - \frac{1}{5} = \frac{4}{5}$

The probability of both not getting selected = $\frac{3}{4} \times \frac{4}{5} = \frac{3}{5} = 60\%$

Hence, option D is correct.

5. Let Radius = r then Circumference = $2\pi r$ cm and height = $(2\pi r - 15)$ cm

$$\text{Curved surface area} = 2\pi r h = 2\pi r \times (2\pi r - 15) = 154$$

By solving, $r = 3.5$ cm

$$\text{Circumference of the base} = 2\pi r \text{ cm} = 2 \times \frac{22}{7} \times \frac{7}{2} = 22 \text{ cm}$$

$$\text{Height} = 22 - 15 = 7 \text{ cm}$$

$$\text{The volume} = \pi r^2 h = \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} \times 7 = 269.5 \text{ cm}^3$$

Hence, option B is correct.

6. Let the number is xy

$$\text{Then, } x + y = 15$$

$$x - y = 1$$

$$\text{Or } y - x = 1$$

By solving, $x = 8$, $y = 7$ (when $x - y = 1$)

$$\text{When, } y - x = 1$$

$$y = 8 \text{ and } x = 7$$

The number should be 78 or 87

According to the question,

When the number was divided by 17, the remainder is 10

It means, the number should be 78

Remainder when 78 was divided by 15 = 3

Hence, option E is correct.

- 7.** Let the total marks of Maths = $200x$
 Minimum passing marks in Maths = $112 - 62 = 50$
 Let the total marks of English = $100y$
 Minimum passing marks in English = 40% of $100y + 30 = 40y + 30$
 According to the question, 40% of $(200x + 100y) = 80x + 40y = 50 + 40y + 30$
 By solving, $x = 1$
 Total marks in Math = 200
 Minimum passing marks = 50
 The reqd. % = $\frac{50 \times 100}{200} = 25\%$
 Hence, option D is correct.

- 8.** Let the average speed of Bus = $5x$ km per hour
 Then, the average speed of tractor = $4x$ km per hour
 Total distance between Bangalore and Chennai = $4x \times 9 = 36x$ km
 Without halt, the bus would have taken $\frac{36x}{5} = 7.2$ hours
 But it takes 9 hours
 Therefore, the required answer = $9 - 7.2 = 1.8$ hours = 108 minutes
 Hence, option B is correct.

- 9.** Let the speed of steamer A in still water = a km per hour and the speed of steamer B in still water = b km per hour
 The speed of stream = 2 km per hour
 Then, according to the question, $(b - 2) - (a - 2) = b - a = 3$
 In downstream, the speed of steamer A = $a + 2 = b - 3 + 2 = b - 1$ km per hour
 The speed of steamer B = $b + 2$ km per hour
 Then, according to the question,

$$\frac{120}{b - 1} - \frac{120}{b + 2} = 2$$
 By solving, $b = 13$ km per hour
 Therefore, the speed of steamer A in still water = $13 - 3 = 10$ km per hour
 The required sum = $10 + 13 = 23$ km per hour
 Hence, option C is correct.

- 10.** The length of longest pole that can be placed on the floor of room is nothing but the diagonal of the rectangle

Therefore, by Pythagorean theorem,

$$(3x)^2 + (4x)^2 = 25^2$$

Where $3x$ is the length of the room and $4x$ is the breadth of the room

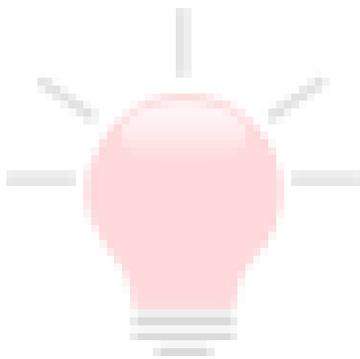
$$9x^2 + 16x^2 = 25x^2 = 625$$

By solving, $x = 5$ cm

The area of the floor of the room = $3x \times 4x = 12 \times 5 \times 5 = 300$ sq. cm

The total cost of cementing the floor of the room = $5 \times 300 = \text{Rs. } 1500$

Hence, option B is correct.



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