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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 11

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

1. The area of a rectangle is one - third of the area of a circle and the length of the rectangle is equal to the diameter of the circle. If the breadth of the rectangle is 11 cm, then what is the perimeter of the rectangle?

A. 60 cm   B. 64 cm   C. 36 cm   D. 58 cm   E. None of these

2. In a mixture of Rum and water, the concentration of Rum is 56%. 200 ml of this mixture was mixed with another mixture P of Rum and water, to get 300 ml mixture of Rum and water. The concentration of rum in the new mixture becomes 40%. What should be the concentration of Water in the mixture P?

A. 98%   B. 72%   C. 92%   D. 84%   E. None of these

3. Two inlet pipes P and Q can fill a water tank in 20 minutes and 30 minutes respectively. Another outlet pipe R can empty the water tank in 40 minutes. If all the three pipes were opened together but Pipe R was closed 5 minutes before the tank was filled. In how many minutes the tank was filled?

A. $19\dfrac{2}{7}$ minutes   B. $10\dfrac{5}{13}$ minutes   C. 15 minutes   D. 20 minutes   E. None of these

4. Two friend A and B invested in a business together Rs. 45000. At the end of 6 months, A withdraws half of his investments but B added 3 times of A's initial investments. At the end of one – year, the share of B in the profit was 50% more than that of A. The initial investment of A was how much more than/less than that of B?

A. Rs. 36000 more   B. Rs. 18000 more   C. Rs. 3000 less   D. Rs. 27000 more   E. None of these

5. A cuboid of dimensions 15 m x 20 m x 18 m was painted from inside as well as outside at the rate of 5 paisa per sq. m. If the cuboid was made of metal of negligible thickness then how much money will be required (In Rupees) to paint the cuboid for inside as well as outside?

A. 9300   B. 93   C. 186   D. 18600   E. None of these

6. From group of 3 boys and x girls, one student is selected at random for Interschool quiz competition. The probability that the selected student is girl is 4/7. If three students are selected at random then what is the probability that two are girls and one is boy?

A. $\dfrac{17}{35}$ B. $\dfrac{1}{7}$ C. $\dfrac{18}{35}$ D. $\dfrac{3}{5}$ E. None of these

7. The perimeter of two squares fields are 480 cm and 720 cm respectively. The area of a rectangular field is equal to the difference between the areas of these two square fields. The breadth of the rectangular field is 60 cm. How much money the owner of the rectangular field will spend for putting a fence around it at the rate of Rs. 5 per cm?

A. Rs. 7200 B. Rs. 8400 C. Rs. 3600 D. Rs. 9000 E. None of these

8. The monthly income of A and B are in the ratio of 3 : 4 respectively and the monthly saving of A, B, and C are in the ratio of 4 : 5 : 6 respectively. The monthly expenditure of A is Rs. 2500 less than that of C and the monthly expenditures of B is Rs. 1000 more than that of A. Every month, C spends Rs. 5000 then how much money does he save?

A. Rs. 4500 B. Rs. 3000 C. Rs. 35000 D. Rs. 2500 E. None of these

9. In a Job opening, 25 girls and 75 boys applied. The interviewer can select either a girl or a boy for the job. In how many ways the interviewer can make this selection?

A. $^{25}C_1 \times {}^{75}C_1$ B. $({}^{25}C_1 \times {}^{75}C_1)/2$ C. $^{75}C_2 \times {}^{25}C_2$ D. $({}^{75}C_2 \times {}^{25}C_2)/2$ E. None of these

10. Ram started for Delhi from Patna at 25 km per hour. After sometime, he realized that at this speed he will be late by 4 hours or could cover only 60% of the total distance till the scheduled time so immediately he doubled his speed and reached Delhi on time. After how many hours of starting journey did he double his speed? (it is given that the distance between Delhi and Patna is 500 km)

A. 16 hr B. 12 hr C. 18 hr D. 10 hr E. None of these

Correct Answers:

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

Explanations:

1. Let the radius of the circle = r cm the length of the rectangle = 2r cm

According to the question, area of the circle = A = πr^2 = 3 × 2r × 11

$\frac{22}{7} \times r = 2 \times 3 \times 11$

r = 21 cm

The perimeter of the rectangle = 2(l + b) = 2(21×2 + 11) = 106 cm

Hence, option E is correct.

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2. In 200 ml of mixture,

The quantity of rum = 56% of 200 = 112 ml

The quantity of water = 200 − 112 = 88 ml

The quantity of another mixture = 300 − 200 = 100 ml

In 300 ml, the quantity of rum = 40% of 300 = 120 ml

The quantity of water = 60% of 300 = 180 ml

The quantity of water was added = 180 − 88 = 92 ml

The concentration of water in the mixture P = x% of 100 ml = 92 ml

x = 92%

Hence, option C is correct.

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3. Suppose the tank was filled in x minutes
Therefore, P and Q worked for x minutes and R worked for x − 5 minutes

$\frac{x}{20} + \frac{x}{30} - \frac{x-5}{40} = 1$

6x + 4x − 3x + 15 = 120
7x = 120 − 15 = 105

$x = \frac{105}{7} = 15$ minutes

It means the tank was filled in 15 minutes
Hence, option C is correct.

4. Let the investments of A = 2x then the investments of B = 45000 − 2x

At the end of 6 months, A remaining amount = $\frac{2x}{2}$ = x

And B's investments become = 45000 − 2x + 6x = 45000 + 4x

The ratio of share = (2x × 6 + x × 6) : {(45000 − 2x) × 6 + (45000 + 4x) × 6} = 3x : 90000 + 2x = 2 : 3

9x = 180000 + 4x

5x = 180000

x = 36000

Therefore, B's investments = 45000 − 36000 = 9000

Therefore, The required answer = 36000 − 9000 = 27000

Hence, option D is correct.

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5. The total surface area of the cuboid = 2(l × b + b × h + h × l) = 2(15 × 20 + 20 × 18 + 18 × 15) = 2 × (300 + 360 + 270) = 2 × 930 = 1860 sq. m

The cuboid is made of metal of negligible thickness then outer surface area = inner surface area

The required answer = 2 × 1860 × 5 = 18600 paisa = Rs. 186

Hence, option C is correct.

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6. The number of ways to select 1 out of 3 + x students = 3 + x ways

The number of ways to select 1 girl out of x girls = x ways

The required probability = $\frac{x}{3 + x} = \frac{4}{7}$

x = 4

The number of ways of ways to select 1 out of 3 boys = $^3C_1$ = 3

The number of ways to select 2 out of 4 girls = $^4C_2$ = 6 ways

The number of ways to select 3 out of 7 students = $^7C_3$ = 35 ways

The reqd. probability = $\frac{6 \times 3}{35} = \frac{18}{35}$

Hence, option C is correct.

7. Sides of the square = 120 cm and 180 cm respectively [As the perimeter is given we get it by dividing the perimeter by 4]

The difference between the area of squares =

(180 +120) × (180 – 120) = 300 × 60 = area of the rectangular field

The area of a rectangular field = length × breadth = 60 × length = 300 × 60

Length of the rectangle = 300 cm

The perimeter of the rectangle = 2(length + breadth) = 2(300 + 60) = 720 cm

The total cost of putting a fence around it = 720 × 5 = Rs. 3600

Hence, option C is correct.

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8. Let the income of A = 3x then the income of B = 4x

The expenditures of C = 5000

The expenditures of A = 5000 – 2500 = 2500

The expenditures of B = 2500 + 1000 = 3500

Let us consider the ratio of A and B only

$$\frac{3x - 2500}{4x - 3500} = \frac{4}{5}$$

15x – 12500 = 16x – 14000

X = 1500

The saving of A = 3X – 2500 = 4500 – 2500 = 2000 = 4Y

Y = 500

The saving of C = 6y = 6 × 500 = 3000

Hence, option B is correct.

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9. The total number of candidates = 100

For one job opening, any of the candidates can be selected

The required number of ways = $^{100}C_1$ = 100 ways
Hence, option E is correct.

10.   The distance between Delhi and Patna = 500 km

60% of 500 = 300

At 25 km per hour he can cover 300 km or late by 4 hours
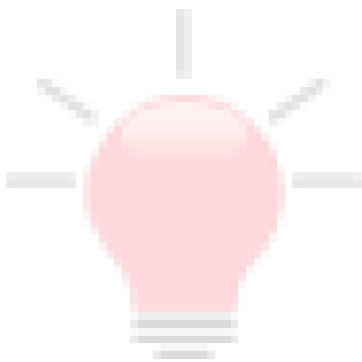
Therefore, the scheduled time = 12 + 4 = 16 hours

Let after t hours he doubled his speed then

$25 \times t + 50 \times (16 - t) = 500$

$25t = 50 \times 6$

T = 12 hours

Hence, option B is correct.