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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 15

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

1. Income of Ram is Rs. X per month. He invests 50% of the yearly income in a bank at the beginning of successive 4 years and the bank pays simple interest of 20% per annum, then the amount at his credit at the end of 4th year will be:

A. Rs. 30X   B. Rs. 33X   C. Rs. 36X   D. Rs. 44 X   E. None of these

2. Price of a toy is partly fixed and partly variable. When a company manufactures 1000 toys, the cost price of one toy is Rs. 40 but when the company manufacture 1500 toys, the cost price of one toy reduced to Rs. 30. Find the cost price of one toy when company manufacture 100 toys?

A. Rs. 320   B. Rs. 310   C. Rs. 32   D. Rs. 31   E. None of these

3. The marked price of an article is Rs. 15,000. A shopkeeper offers three successive discounts of 70%, 30% and 70%. Find the discount, the shopkeeper would have offered equivalent to three successive discounts?

A. 93.2%   B. 92.2%   C. 93.7%   D. 92.7%   E. None of these

4. In a head office of RRB, 250 persons are employed in which some are male and some are female. 33.33% of the number of male is equal to half of the number of female. Find the difference between the number of male and the number of female working in that head office?

A. 50   B. 100   C. 150   D. 75   E. None of these

5. Ram and Shyam start at the same time from the same place towards their school. If the speed of Shyam is 83.33% of Ram's speed then he reaches the school 1 hour 15 minutes after Ram. Find the time taken by Ram to reach the school?

A. 6 hours 15 minutes   B. 6 hours 45 minutes   C. 7 hours 30 minutes   D. 5 hours 15 minutes
E. None of these

6. The speed of motorboat in still water is 35 km/hr. It takes 6 hours to go 180 km upstream. Find the time taken by the motorboat to return the same distance.

A. 3.5 hours   B. 2.5 hours   C. 4 hours   D. 4.5 hours   E. None of these

7. If 'x' men can do a piece of work in 10 days, then find the number of days taken by 'y' men to do 66.67% more than the total work?

A. $\dfrac{50x}{y}$ days   B. $\dfrac{10x}{y}$ days   C. $\dfrac{50x}{3y}$ days   D. $\dfrac{10x}{3y}$ days   E. None of these

8. If the monthly salary of Neha is 60% of the Nisha's monthly salary and the ratio of their expenditures is in the ratio of 9 : 19 respectively. At the end of one year each saves Rs. 12,000 then find the monthly salary of Neha?

A. Rs. 2500   B. Rs. 2400   C. Rs. 3600   D. Rs. 4800   E. None of these

9. A park is in the shape of right-angled triangle. If the sides (in meter) of that right-angled triangle are three consecutive integers. Find the cost of sowing flower seeds in the park at the rate of Rs. 25 per sq. m?

A. Rs. 150   B. Rs. 125   C. Rs. 300   D. Rs. 250   E. None of these

10. A, B, and C entered into a partnership. The investments of A and B was Rs. 2250 and Rs. 2750 respectively. At the end of one year they gained Rs. 1215 out of which A got Rs. 405. Find the investments of C?

A. Rs. 1700   B. Rs. 2500   C. Rs. 1850   D. Rs. 1750   E. None of these

Correct Answers:

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

Explanations:

1. Ram's income in one month = Rs. x

In one year i.e. in 12 months = 12 × x = 12x

Now he invests 50% of the yearly income

= 50% of 12x = $50 \times \dfrac{12x}{100}$

= 6x for 4 years at the rate of 20% per annum

Therefore, he will invest 6x at the beginning of successive four year

For the first year, 6x will be invested for 4 years

For the second year, 6x will be invested for 3 years

For the third year, 6x will be invested for 2 years

For the fourth year, 6x will be invested for 1 year

The total amount he will have in account at the end of the fourth year

= $\left[6x + \dfrac{6x \times 4 \times 20}{100}\right] + \left[6x + \dfrac{6x \times 3 \times 20}{100}\right] + \left[6x + \dfrac{6x \times 2 \times 20}{100}\right] + \left[6x + \dfrac{6x \times 1 \times 20}{100}\right]$

= $24x + \dfrac{24x}{5} + \dfrac{18x}{5} + \dfrac{12x}{5} + \dfrac{6x}{5}$

= $24x + \dfrac{60x}{5} = 24x + 12x = 36x$

Hence, option C is correct.

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2. Sum of 15 numbers = 15 × 26

When each number is multiplied by 6 then the sum will become = 15 × 26 × 6

Now, when each number is increased by 6 then sum = 15 × 26 × 6 + 15 × 6

Reqd. average = $\dfrac{15\,(\,26 \times 6 + 6)}{15}$ = 26 × 6 + 6 = 162

Hence, option C is correct.

3. The selling price after the three successive discounts

$$= 15000 \times \frac{100 - 70}{100} \times \frac{100 - 30}{100} \times \frac{100 - 70}{100}$$

$$= 15000 \times \frac{30}{100} \times \frac{70}{100} \times \frac{30}{100} = 945$$

Total discount = 15,000 − 945 = Rs. 14055

The discount equivalent to three successive discounts = $\dfrac{14055 \times 100}{15000}$ = 93.7%

Hence, option C is correct.

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4. According to the question,

33.33% of the number of male = 1/2 of the number of female

$$\frac{\text{Male}}{3} = \frac{\text{female}}{2}$$

Male : Female = 3 : 2

Let Male = 3x and Female = 2x

Then sum = 5x = 250, x = 50

Required difference = 3x − 2x = x = 50

Hence, option A is correct.

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5. Shyam's speed = 83.33% of Ram's speed = 5/6 of Ram's speed

Ram's speed: Shyam's speed = 6 : 5

We know that speed is inversely proportion to time.

So, the respective time taken by Ram and Shyam = 5 : 6

Let Ram takes 5x hours and Shyam takes 6x hours then difference will become 6x − 5x = x = 1 hour 15 minutes

So, the time taken by Ram to reach the school = 5x = 5 × (1 hour 15 minutes) = 6 hours 15 minutes

Hence, option A is correct.

6. Let the speed of stream = x km/hr

The speed of the motorboat in upstream = (35 – x) km/hr

We know that distance = speed × time

180 = (35 – x) × 6

By solving, x = 5 km/hr

While returning the motorboat will go in downstream

The speed of the motorboat in downstream = (35 + 5) km/hr

The required time taken = $\dfrac{180}{40}$ = 4.5 hours

Hence, option D is correct.

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7. The total work is done by x men in 10 days = 10 × x units

66.67% more than the total work = (100 + 66.67) % of 10 × x = 166.67% of 10x

= $\dfrac{50x}{3}$ units

Let y men take n days to complete 50x/3 units then

$Y \times n = \dfrac{50x}{3}$, $n = \dfrac{50x}{3y}$

Hence, option C is correct.

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8. Monthly salary of Neha = 60% of the monthly salary of

Nisha = $\dfrac{3}{5}$ of the monthly salary of Nisha

The respective ratio of the monthly salary of Neha and Nisha = 3 : 5 = Ratio of the yearly salary of Neha and Nisha

Let us assume that the yearly salary of Neha is 3x and the yearly salary of Nisha is 5x

According to the question,

$\dfrac{3x - 12000}{5x - 12000} = \dfrac{9}{19}$

By solving, x = 10,000

The yearly salary of Neha = 3 × x = 30,000

So, the monthly salary of Neha = $\dfrac{30000}{12}$ = 2500

Hence, option A is correct.

9. In a right-angled triangle PQR, $PQ^2 + QR^2 = PR^2$

The possible values of PQ, QR, and PR are 3, 4, and 5

The area of the triangle $= \dfrac{1 \times base \times height}{2} = \dfrac{3 \times 4}{2} = 6\ m^2$

The cost of sowing flowers seeds in the park at the rate of Rs. 25 per sq. m = 25 × 6 = Rs. 150

Hence, option A is correct.

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10. Let the investments of C = Rs. x

Ratio of their investments = 2250 : 2750 : x ....(i)

Let the share of C is Rs. y

Then share of B = 1215 – (405 + Y) = 810 – Y

Ratio of their share = 405 : (810 – y) : y ....(ii)

By taking the ratio of the investments of only A and B and the share of only A and B

2250 : 2750 = 405 : (810 – Y)

By solving, y = 315

Now taking A and C

2250: X = 405 : 315

By solving, x = 1750

Hence, option D is correct.

Alternative Solution:

As we can see from the question A got (405/1215) i.e one third of the profit.

So the investment of A also should be one third of the total investment.

So, Investment of (A + B + C) = 3 × Investment of A

Putting the values we get Investment of C = Rs. 1750

Hence, option D is correct.