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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 6

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

1. A milkman orders his servant to mix water in 28 litres pure milk. The servant first mixes 20 litres milk and water solution in which the concentration of milk was 60% and then take out 12 litres from it. Again, he mixes 4 litres of water. What is the concentration of milk in the final mixture?

- A. 60%                      B. 70%                      C. 64%                      D. 75%                      E. None of these

2. 10 years ago, respective ratio of the age of mother and daughter was 4 : 1. 10 years hence, the respective ratio of the age of mother and daughter will become 2 : 1. At present, what is the sum of their age?

- A. 80 years                      B. 90 years                      C. 50 years                      D. 70 years                      E. None of these

3. By what percentage above the cost price, a fan should be sold if a shopkeeper wants to make a profit of Rs. 500 and the marked price of the article is Rs. 6000 which is 50% above the cost price?

- A. 25%                      B. 12.5%                      C. 20%                      D. 15%                      E. None of these

4. When a person invests some money under simple interest then at the end of some years the amount become 9 times of the principal and the numerical value of the rate of interest per annum is double of the time. At the end of 15 years, the amount will become how many times of the principal at the same rate of interest?

- A. 6 times                      B. 8 times                      C. 9 times                      D. 7 times                      E. None of these

5. A postmaster wants to get delivered 6 letters at six different addresses. In the post office there are 2 postmen then in how many ways can the postmaster send the letters at different addresses through the postmen?

- A.  $\frac{6!}{2!}$                       B.  $6! \times 2!$                       C. 64                      D. 36                      E. None of these

6. In a nuclear reaction, two particles A and B are formed at the different rate every microsecond. When time was 0 microsecond, the ratio of particle A to particle B was 4 : 5 but when  $t = 1$  microsecond, the ratio of particle A to particle B becomes 5 : 7. By what percent above the particle A, particle B is formed?

- A. 28%                      B. 40%                      C. 25%                      D. 12%                      E. None of these

7. On the occasion of teacher's day, some number of boys and girls contributed some money. The average contribution of boys was Rs. 250 and that of girls was Rs. 100. If the average contribution per student was Rs. 160 on the whole then what percent of students are boys?

- A. 60%                      B. 44%                      C. 40%                      D. 80%                      E. None of these

8. Miss Geeta spends 25% of her monthly income on food and 20% of the remaining on rent. If she invests the remaining amount in two schemes, A and B in the ratio of 7 : 5 respectively. The expenditure on rent is what percent of her investment in the scheme B?

- A. 40%                      B. 50%                      C. 75%                      D. 60%                      E. None of these

9. Raju can travel from his house to school in  $x$  hours if he does not stop anywhere. One day, he increases his speed by 4 km per hour but stops for 15 minutes on a tea shop then he reaches 5 minutes earlier. If the distance from his house to the school is 40 km then find the value of  $x$ ?

- A. 4                      B. 2                      C. 1                      D. 1.7                      E. None of these

10. The marked price of an article was Rs. 10 per piece. To increase the sales, a shopkeeper gives 20% discount on the marked price. If the shopkeeper gains Rs. 4500 by selling 9000 such articles then what is the cost price of the article?

- A. Rs. 7                      B. Rs. 7.5                      C. Rs. 6                      D. Rs. 7.25                      E. None of these

**Correct Answers:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
D	D	B	D	C	D	C	D	B	B

## Explanations:

1. In 20 litres of milk and water solution, quantity of milk = 60% of 20 = 12 litres and the quantity of water = 20 – 12 = 8 litres

In the new mixture, the quantity of milk = 28 + 12 = 40 litres and the quantity of water = 8 litres

The ratio of milk to water in the new mixture = 40 : 8 = 5 : 1

When, he takes out 12 litres of mixture then in 12 litres mixture, the quantity of milk

$$= \frac{5}{6} \times 12 = 10 \text{ litres}$$

and the quantity of water = 12 – 10 = 2 litres

The remaining quantity of milk in the mixture = 40 – 10 = 30 litres and the remaining quantity of water in the mixture = 8 – 2 = 6 litres

Now, again he mixes 4 litres of water then the quantity of water will become = 6 + 4 = 10 litres and the total quantity of mixture will become 30 + 10 = 40 litres in which 30 litres are milk

$$\text{The reqd. concentration} = \frac{30 \times 100}{40} = 75\%$$

Hence, option D is correct.

2. 10 years ago, let mother's age = 4x years then daughter's age = x years

Present age of mother = (4x + 10) years

Present age of daughter = (x + 10) years

10 years hence, mother's age = (4x + 20) years and daughter's age = (x + 20) years

According to the question,

$$\frac{4x + 20}{x + 20} = \frac{2}{1}$$

$$4x + 20 = 2x + 40$$

$$2x = 20, x = 10$$

At present, Mother's age = 4x + 10 = 4 × 10 + 10 = 50 years and daughter's age = x + 10 = 10 + 10 = 20 years

The required sum = 50 + 20 = 70 years

Hence, option D is correct.

3.  $MP = \text{Rs. } 6000$

$$CP = \frac{6000 \times 100}{100 + 50} = \text{Rs. } 4000$$

When profit = 500 then the reqd. %

$$= \frac{500 \times 100}{4000} = 12.5\%$$

Hence, option B is correct.

4. Let the principal = P and time = x years then the rate of interest = 2x% per annum

$$SI = 9P - P = 8P$$

We know that,  $SI = \frac{P \times R \times T}{100}$

$$8P = \frac{P \times 2x \times x}{100}$$

$$x^2 = 4 \times 100$$

$$x = 2 \times 10 = 20$$

Therefore, the rate of interest =  $2x = 40\%$  per annum

SI at the end of 15 years

$$SI = \frac{P \times 15 \times 40}{100} = 6P$$

$$\text{Amount} = P + SI = P + 6P = 7P$$

Hence, option D is correct.

5. Each letter can be delivered at the six different addresses in 2 different ways

Hence, the required number of ways =  $2^6 = 64$

Hence, option C is correct.

6. Let the particle A is formed at the rate of  $x\%$  per microsecond and the particle B is formed at the rate of  $y\%$  per microsecond

Let when  $T = 0$ , then number of A particle = 4 then the number of B particle = 5

$$\text{When } T = 1, \frac{x\% \text{ of } 4}{y\% \text{ of } 5} = \frac{5}{7}$$

$$\frac{4x}{5y} = \frac{5}{7}$$

$$28x = 25y$$

$$x : y = 25 : 28$$

Therefore, let the particle A is formed at the rate of  $25x\%$  per microsecond then the particle B is formed at the rate of  $28x\%$  per microsecond

$$\text{The reqd. \%} = \frac{(28x - 25x) \times 100}{25x} = \frac{300}{25} = 12\%$$

Hence, option D is correct.

7. Let the number of boys =  $x$  and the number of girls =  $y$  then

$$250x + 100y = 160(x + y)$$

$$90x = 60y$$

$$x : y = 2 : 3$$

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

Hence, option C is correct.

8. Let Geeta's Monthly income =  $100x$

Expenditures on food =  $25\%$  of  $100x = 25x$

Remaining =  $100x - 25x = 75x$

Expenditures on rent =  $20\%$  of  $75x = \frac{20 \times 75x}{100} = 15x$

Remaining =  $75x - 15x = 60x$

Investments in the scheme B =  $\frac{5 \times 60x}{12} = 25x$

$$\text{The reqd. \%} = \frac{15x \times 100}{25x} = 60\%$$

Hence, option D is correct.

9. Let the speed = a km per hr

When he increases his speed by 4 km per hour

New speed = a + 4 km per hour

He stops for 15 minutes on a tea shop then he reaches 5 minutes earlier it means if he had not stopped for 15 minutes then he would have reached 15 + 5 = 20 minutes earlier @ a + 4 km per hour

We know that, time =  $\frac{\text{distance}}{\text{speed}}$

$$\frac{40}{a} - \frac{40}{a+4} = \frac{20}{60}$$

$$40 \times 3(a+4-a) = a(a+4)$$

$$40 \times 3 \times 4 = 480 = a(a+4)$$

By solving, a = 20 km per hour

$$\text{Value of } x = \frac{\text{distance}}{\text{speed}} = \frac{40}{20} = 2 \text{ hours}$$

Hence, option B is correct.

10. 20% discount on the marked price = 20% discount on Rs 10 = (100 - 20)% of 10 = 80% of 10 = Rs. 8 = SP

Let the cost price of one article = Rs. x then the CP of 9000 articles = 9000 × x

$$\text{SP} = 8 \times 9000 = \text{Rs } 72000$$

$$\text{CP} = \text{SP} - \text{Gain} = 72000 - 4500 = 67500 = 9000x$$

$$x = \text{Rs } 7.5 = \text{CP of one article}$$

Hence, option B is correct.



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