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Mixed Maths Questions for SBI Clerk Pre and IBPS Clerk Pre Exams.

SBI Clerk Pre Maths Quiz 1

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

1. A can paint ceiling of a room of length 5 cm and breadth 12 cm in 12 hours but B can paint ceiling of a room of length 10 cm and breadth 5 cm in 10 hours. How long A and B together will take to paint ceiling of a room of length 15 cm and breadth 20 cm?

- A. 45 hours B. 20 hours C. 60 hours D. 30 hours E. None of these

2. A and B started a business by investing in the ratio of 7: 10. C joins after 3 months with the investment one and a half of that of A. At the end of 1 year, out of the total profit, C's share was Rs. 12600, then what was the total profit (in Rs.)?

- A. 39600 B. 39800 C. 36400 D. 41200 E. None of these

3. Normally, a bakery shop owner sells a pack of 16 biscuits for Rs. 50. In the peak hour, he sells a pack of same 12 biscuits for the same price. In peak hour, the selling price is how much above than that of normal hour?

- A. 25% B. 33.33% C. 30% D. 40.67% E. None of these

4. Pallavi got marks in physics and chemistry in the ratio of 4: 5 respectively. In chemistry, her marks were 30 more than that of physics and the average of marks received by her in physics, chemistry and maths together was 180. How many marks did she get in maths?

- A. 270 B. 60 C. 120 D. 180 E. None of these

5. The simple interest received on a sum of money at the end of 10 years is two times of the principal. At the same rate of interest, what would be the ratio of principal and compound interest received at the end of two years?

- A. 20 : 11 B. 20 : 9 C. 25 : 11 D. 25 : 9 E. None of these

6. The uniform speed of a motorboat in upstream is 12 km per hour and its downstream speed is 18 km per hour. The motorboat goes from point P to point Q in upstream and returns the same distance in downstream. What is its average speed of the entire journey? (the speed of the motorboat and stream was uniform during the entire journey)

- A. 15 km per hour B. 14.8 km per hour C. 14.2 km per hour D. 14.4 km per hour E. None of these

7. At the speed of 60 km per hour, a motorcyclist can catch the train (last bogie) running in the same direction in 3 hours and he passes the train completely in the next 15 minutes. If the length of train is 200 meters then how much distance did the train travel from the time when motorcyclist started chasing it?

- A. 204.8 km B. 192.4 km C. 158.6 km D. 176.2 km E. None of these

8. At present, five times of the age of Rahul is equal to three times of the age of Rocky. The age of Rocky's wife is 5 years less than that of Rocky. 5 years ago, the ratio of the age of Rahul and Rocky's wife was 2 : 3. At present, what is the average age of Rahul, Rocky and his wife?

- A. 25 years B. 30 years C. 20 years D. 15 years E. None of these

9. The difference between the simple interest and compound interest (compounded annually) received on a sum of money for 2 years at the rate of 18% per annum is Rs. 8100. How much amount (in Rs. lakhs) will be received at the end of 5 years under simple interest on the same sum of money and the same rate of interest?

- A. 0.475 B. 475 C. 4.65 D. 4.75 E. None of these

10. The length, breadth and height of a rectangular base godown (storage room) is in the ratio of 3 : 5 : 4 respectively. If the area of the floor of the godown is 300 sq. m then how much money will be required to paint all the surface of the godown except the floor at the rate of Rs. 2.5 per sq. m?

- A. Rs. 3350 B. Rs. 3275 C. Rs. 3950 D. Rs. 4250 E. None of these

Correct Answers:

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

Explanations:

1. We know that,

$$\frac{M_1D_1}{W_1} = \frac{M_2D_2}{W_2}$$

$$\text{Or, } M_1D_1W_2 = M_2D_2W_1$$

$$A \times 12 \times (10 \times 5) = B \times 10 \times (12 \times 5) \text{ (Where } 10 \times 5 \text{ and } 12 \times 5 \text{ is the area of the ceiling of the rooms)}$$

$$A : B = \text{The ratio of efficiency} = 1 : 1$$

Now, A and B together can paint the area of

$$60 \text{ cm}^2 \text{ in } \frac{12}{2} = 6 \text{ hours}$$

The time taken by A and B together to paint

$$15 \times 20 \text{ cm}^2 = \frac{6 \times 15 \times 20}{60} = 30 \text{ hours}$$

Hence, option D is correct.

2. Let the investment of A = Rs. $7x$ then the investment of B = Rs. $10x$ and the investment of C = $1.5 \times 7x =$ Rs. $10.5x$

$$\text{The ratio of share} = 7x \times 12 : 10x \times 12 : 10.5x \times 9 = 28 : 40 : 31.5$$

$$\text{C's share} = 31.5x = 12600$$

$$x = \text{Rs } 400$$

$$\text{Total profit} = (28x + 40x + 31.5x) = 99.5x = \text{Rs } 39800$$

Hence, option B is correct.

3.

In the normal time, the SP of one biscuit = $\frac{50}{16}$

In peak hour, The SP of one biscuit = Rs. $\frac{50}{12}$

The reqd. % = $\left(\frac{50}{12} - \frac{50}{16}\right) \times \frac{100}{50/16} = \left(\frac{4}{12 \times 16} \times 100 \times 16\right)$

= $\frac{100}{3} \% = 33.33\%$

Hence, option B is correct.

4. Let the marks of physics = $4x$ then the marks of chemistry = $5x$

According to the question, $5x - 4x = x = 30$

The sum of the marks of physics, chemistry and maths = $9x + y = 180 \times 3 = 540$ (y = the marks of maths)

$270 + y = 540$

$y = 540 - 270 = 270$ = The marks of maths

Hence, option A is correct.

5. Let the principal = Rs. $100x$

Then, according to the question, $SI = 2 \times 100x = 200x$

$$SI = \frac{P \times R \times T}{100}$$

$$200x = \frac{100x \times R \times 10}{100}$$

$R = 20\%$

The CI on Rs. $100x$ for 2 years = $100x \left(1 + \frac{20}{100}\right)^2 - 100x = 44x$

The required ratio = $100x : 44x = 25 : 11$

Hence, option C is correct.

6. Let the total distance from point P to Q = x km

Then, Total time taken in upstream = $\frac{x}{12}$ hours

Total time taken in downstream = $\frac{x}{18}$ hours

The average speed = $\frac{2x}{\left(\frac{x}{12} + \frac{x}{18}\right)} = \frac{2 \times 12 \times 18}{12 + 18} = \frac{2 \times 12 \times 18}{30} = 14.4$ km per hour

Hence, option D is correct.

7. Since, the motorcyclist passes the train completely in 15 minutes

Let the speed of train = x km per hour

Relative speed of train and motorcyclist = $60 - x$ km per hour

Distance = speed \times time

$$\frac{200}{1000} = 0.2 = (60 - x) \times \frac{15}{60}$$

$$0.8 = 60 - x$$

$$x = 59.2 \text{ km per hour}$$

The motorcyclist passes the train in 3 hour 15 minutes

$$= \frac{13}{4} \text{ hours}$$

The total distance travelled by the train in $\frac{13}{4}$ hours

$$= \frac{59.2 \times 13}{4} = 192.4 \text{ km}$$

Hence, option B is correct.

8. At present, five times of the age of Rahul is equal to three times of the age of Rocky

Rahul's age: Rocky's age = 3 : 5

Let the age of Rahul = $3x$ years then the age of Rocky = $5x$ years

The age of Rocky's wife = $5x - 5$ years,

5 years ago, the age of Rahul = $3x - 5$ years

The age of Rocky's wife = $5x - 5 - 5$ years

$$\frac{3x - 5}{5x - 10} = \frac{2}{3}$$

$$9x - 15 = 10x - 20$$

$$x = 5 \text{ years}$$

At present, the sum of their age = $3x + 5x + 5x - 5$ years = $13x - 5 = 65 - 5 = 60$ years

The reqd. average = $\frac{60}{3} = 20$ years

Hence, option C is correct.

9. Let the sum of money = Rs. x

$$\text{Then, The difference} = \left[x \left(1 + \frac{18}{100} \right)^2 - x \right] - \frac{x \times 2 \times 18}{100} = 8100$$

By solving, $3.24x = 8100 \times 100$

$$x = 250000$$

The SI of 5 years @ 18% per annum

$$= \frac{250000 \times 18 \times 5}{100} = 225000$$

The amount = $250000 + 225000 = 475000 = \text{Rs. } 4.75 \text{ lakhs}$

Hence, option D is correct.

10. Let length = $3x$ m

Breadth = $5x$ meters

Height = $4x$ meters

The area of the floor = $l \times b = 3x \times 5x = 15x^2$

$x \times x = 20$ sq m

The total area except floor = $2(l \times h + b \times h) + l \times b$

$$= 2 \times (3 \times 4 \times x \times x + 5 \times 4 \times x \times x) + 3 \times 5 \times x \times x = 2 \times 4 \times 20(3 + 5) + 15 \times 20 = 160 \times 8 + 300 = 1280 + 300 = 1580$$

The required cost = $1580 \times 2.5 = \text{Rs. } 3950$

Hence, option C is correct.



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