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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 1

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

1. If 2 kg of metal, of which $\frac{1}{3}$ is zinc and the rest is copper, be mixed with 3 kg of metal, of which $\frac{1}{4}$ is zinc and the rest is copper, then what will be the ratio of zinc to copper in the mixture?

- A. 13 : 42 B. 17 : 43 C. 19 : 43 D. 15 : 42 E. None of these

2. A and B entered into a partnership by investing Rs 16,000 and Rs 12,000 respectively, After 3 months. A withdrew Rs 5000, while B invested Rs 5000 more, After 3 months more, C joins the business with a capital of Rs. 21,000. After a year, they obtained a profit of Rs 26,400. By what amount does the profit of B exceed the share of C?

- A. Rs. 3600 B. Rs. 3587 C. Rs 3200 D. Rs 2800 E. None of these

3. The ratio of the length to the breadth of a rectangular park is 3 : 2, if a man cycling along the boundary of the park at the speed of 12 Km/hr completes one round in 8 minutes, then what is the area of the park? (in sq m)

- A. 154000 B. 153600 C. 307400 D. 307200 E. None of these

4. On what sum will the difference between the simple and the compound interest for 3 years at 5 percent per annum amount to Rs. 24.40?

- A. Rs. 3300 B. Rs. 3587 C. Rs. 3200 D. Rs. 2800 E. None of these

5. A train takes 50 sec to cross a boy travelling at 6 kmph in the opposite direction to it. Another train which is half as long as and 25% faster takes 30 sec to cross the stationary pole. Find the approximate length of the second train.

- A. 125 m B. 100 m C. 75 m D. 190 m E. 148 m

6. Sanjana buys two Activas on two different cost prices and for a total cost for Rs. 80000. By selling one for $\frac{3}{4}$ of its cost and another for $\frac{4}{3}$ of its cost, she earns a profit of Rs. 8000 on the whole cost. Find the cost price of the higher priced Activa.

- A. Rs. 45000 B. Rs. 50000 C. Rs. 48000 D. Rs. 40000 E. None of these

7. A boat takes 19 hours to travel downstream from point A to point B and coming back to a point C midway between A and B. If the speed of the stream is 4 km/hr and the speed of the boat in still water is 14 km/hr, what is the distance between A and B?

- A. 160 km B. 180 km C. 200 km D. 220 km E. None of these

8. If 6 years is subtracted from the present age of Randheer and the remainder is divided by 18, then the present age of his grandson Anup is obtained, If Anup is 2 year younger than Mahesh whose age is 5 Years, then what is the age of Randheer?

- A. 96 years B. 84 years C. 48 years D. 60 years E. None of these

9. In an examination, the number of students who passed and the number of those who failed were in the ratio of 25 : 4. If five more students had appeared and the number of failed students was 2 less than earlier, the ratio of passed to failed students would have been 22 : 3. What is the number of students who appeared for the examination?

- A. 145 B. 150 C. 155 D. 180 E. None of these

10. Three employees of a company P, Q and R are assigned a piece of work for Rs. 529 based on their work. Work should be completed in such a way that if any two do a piece of work, remaining work will be completed by the third one. P and Q together are supposed to do $\frac{19}{23}$ of the work and Q and R together $\frac{8}{23}$ of the work. What amount should P be paid?

- A. Rs. 315 B. Rs. 345 C. Rs. 355 D. Rs. 375 E. None of these

Correct Answers:

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

Explanations:

1. In 2 kg of metal

$$\begin{array}{cc} \text{Zinc} & \text{Copper} \\ 2 \times \frac{1}{3} & 2 \times \frac{2}{3} \end{array}$$

$$\frac{2}{3} \quad \frac{4}{3}$$

In 3 kg of metal

$$\begin{array}{cc} \text{Zinc} & \text{Copper} \\ 3 \times \frac{1}{4} & 3 \times \frac{3}{4} \end{array}$$

$$\frac{3}{4} \quad \frac{9}{4}$$

$$\text{Now, New Ratio} = \frac{\frac{2}{3} + \frac{3}{4}}{\frac{4}{3} + \frac{9}{4}}$$

$$= \frac{8+9}{12} \times \frac{12}{16+27} = \frac{17}{43} = 17 : 43$$

Hence, option (B) is correct.

2. We take only thousands place and multiply it with the month

then, ratio of profit A : B : C

$$= A : B : C = 16 \times 3 + 11 \times 9 : 12 \times 3 + 17 \times 9 : 21 \times 6$$

$$= 48 + 99 : 36 + 153 : 126$$

$$= 147 : 189 : 126$$

$$= 7 : 9 : 6$$

$$\therefore \text{Total profit} = 7 + 9 + 6 = 22$$

$$22 = 26400$$

$$\therefore \text{Difference of B and C} = (9 - 6) = 3$$

$$\therefore 3 = \frac{26400}{22} \times 3 = 1200 \times 3 = 3600$$

Hence, option A is correct.

3. Perimeter = Distance covered in 8 minutes

$$= \left(\frac{12000}{60} \times 8 \right) \text{m} = 1600 \text{ m}$$

Let the length be $3x$ and breadth be $2x$ m. then, $2(3x + 2x) = 1600$

$$\text{or, } 10x = 1600$$

$$\therefore x = 160$$

$$\therefore \text{Length} = 160 \times 3 = 480 \text{ m}$$

$$\text{Breadth} = 160 \times 2 = 320 \text{ m}$$

$$\therefore \text{Area of the park} = 480 \times 320 = 153600 \text{ sq m}$$

Hence, option B is correct.

4. We know that difference

$$= \frac{Pr^2(300 + r)}{(100)^3}$$

$$\text{or, } 24.40 = \frac{P \times 5^2(300 + 5)}{(100)^3}$$

$$\text{or, } P = \frac{24.40 \times 100 \times 100 \times 100}{25 \times 305}$$

$$= \frac{244000 \times 4}{305} = \frac{976000}{305} = \text{Rs. } 3200$$

Hence, option (C) is correct.

5. Speed of boy = 6kmph

$$\Rightarrow 1 \text{ kmph} = \frac{5}{18} \text{ mps}$$

$$\Rightarrow 6 \text{ kmph} = 6 \times \frac{5}{18} = 1.66 \text{ m/s}$$

Let the length and speed of 1st train be L meters and v m/s resp.

We know that, distance = relative speed \times time

Considering the length of the boy negligible,

$$L = (v + 1.66) \times 50 \quad \dots(1) \quad \{\text{both boy and train are in opposite direction hence we take positive sign}\}$$

$$\text{Length of 2nd train} = \frac{L}{2}$$

Speed of 2nd train = 125% of $v = 1.25v$

$$\Rightarrow \frac{L}{2} = 1.25v \times 30$$

$$\Rightarrow L = 75v \quad \dots(2)$$

Solving the equation 1 & 2, we get

$$L = 250 \text{ m} \Rightarrow \text{length of 2nd train} = \frac{L}{2} = 125 \text{ m}$$

Option (A) is correct.

6. Let the cost price of one Activa = Rs x
Cost price of another Activa = Rs $(80000 - x)$
According to the question,

$$x \times \frac{4}{3} + (80000 - x) \times \frac{3}{4} = 88000$$

$$\frac{4x}{3} + 60000 - \frac{3x}{4} = 88000$$

$$\frac{(16x - 9x)}{12} = 88000 - 60000$$

$$\frac{7x}{12} = \text{Rs } 28000$$

$$x = 28000 \times \frac{12}{7}$$

$$x = \text{Rs } 48000$$

Cost price of higher priced Activa = Rs 48000

Hence, option C is correct.

7. Let the total distance be D km According to the question,

$$\frac{D}{14 + 4} + \frac{D}{14 - 4} = 19$$

$$\text{or, } \frac{D}{18} + \frac{D}{20} = 19$$

$$\text{or, } \frac{10D + 9D}{180} = 180$$

$$\therefore 19D = 19 \times 180 \therefore D = 180 \text{ km.}$$

Hence, option (B) is correct.

8. Mahesh's present age = 5 years
Anup's present age = $5 - 2 = 3$ years
Let present age of Randheer be x .

$$\text{Then, } \frac{x - 6}{18} = \text{Anup's present age}$$

Now, according to the question.

$$\frac{x - 6}{18} = 3$$

$$\Rightarrow x - 6 = 54$$

$$\Rightarrow x = 54 + 6 = 60 \text{ years}$$

Hence, option (D) is correct.

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9. Let the number of students who appear be $(25x + 4x) = 29x$

Now, Appeared Passed Failed
29x 25x 4x

Now, $(29x + 5) - (4x - 2) = 22$
 $- (4x - 2)$

$$\text{Then, } \frac{(29x + 5) - (4x - 2)}{4x - 2} = \frac{22}{3}$$

$$\text{or, } \frac{25x + 7}{4x - 2} = \frac{22}{3}$$

$$\text{or, } 88x - 44 = 75x + 21$$

$$\text{or, } 13x = 21 + 44 = 65$$

$$\therefore x = 5$$

Hence total number of appeared students = $29x = 29 \times 5 = 145$

Hence, option A is correct

10.

Work done by Q and R together = $\frac{8}{23}$

Since remaining work must be completed by P

$$\therefore \text{Work done by P} = 1 - \frac{8}{23} = \frac{15}{23}$$

Thus, amount of money paid to P = $\frac{15}{23} \times 529 = \text{Rs. } 345$

Hence option B is correct.



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