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Mixed Maths Questions for SBI PO Pre, IBPS PO Pre, IBPS Clerk Mains, SBI Clerk Mains and LIC AAO Pre Exams.

Bank PO Maths Quiz 40

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

1. A bond gets matured in 10 years. Ram invested Rs. 42000 in this bond and received Rs. 105000 once the bond matured. If the bond was under simple interest, then what was the rate of interest per annum ?

- A. 10% B. 12.5% C. 15% D. 7.5% E. None of these

2. Three friends A, B, and C started a business and invested in the ratio of 8: 6: 15. At the end of one year out of the total profit of Rs. 6000, A's share was Rs. 2000 which was Rs. 500 more than that of B's share. Find the ratio of time for which they had contributed their capitals?

- A. 1 : 1 : 2 B. 5 : 5 : 3 C. 3 : 3 : 2 D. 6 : 6 : 5 E. None of these

3. From 16 cricket players, a cricket team of 11 players is to be formed. If a captain and a wicket keeper are always chosen and they are the same players, then in how many ways the cricket team can be formed?

- A. 924 ways B. 1001 ways C. 1078 ways D. 1095 ways E. None of these

4. The ratio of length of each equal side to third side of an isosceles triangle is 5 : 6. If the area of the isosceles triangle is 108 sq. cm and the third side of the triangle is equal to the diameter of a circle. What is be the area of the circle (in sq. cm)?

- A. 144π B. 36π C. 225π D. 81π E. None of these

5. A mobile phone company reported that it has total sales of 858 hundred mobile phones in May 2018. When it checked with the last year sales data then it found that in the same month of the year 2017, the total sales of mobile phone was 715 hundred. In June 2018, it is expected that the percentage increase in sales over May 2018 will be same as the percentage increase in sales in May 2018 over May 2017. What will be the total number of mobile phones sold in June 2018?

- A. 912.5 hundred B. 1029.6 hundred C. 1224.4 hundred D. 1086.6 hundred E. None of these

6. A person invests Rs. x under compound interest at the rate of 12% annum compound annually. At the end of 2 years, he withdraws half of the total amount and at the end of 3 years from the starting he receives total amount of Rs. 11032. At the end of 2 years, how much money does he withdraw?

- A. Rs. 9780 B. Rs. 9850 C. Rs. 10015 D. Rs. 9925 E. None of these

7. If Jackey loses 6 kg of his weight, then the average weight of Jackey and his sister Jara will become 45 kg. If Jara loses 5 kg of her weight then, the average weight of Jackey and Jara together with their mother will become 60 kg. The weight of Jackey is how many kg more than that of Jara?

- A. 12 B. 11 C. 18 D. 20 E. Can't be determined

8. When a positive number x was divided by another positive number y then the remainder obtained was 4. If x/y is equal to 24.8 then, what will be the remainder when x is divided by 17?

- A. 5 B. 7 C. 4 D. 3 E. None of these

9. In the year 2017, 25 members of a company visited Red Fort, 25 members visited Taj Mahal and 30 members visited India Gate. None of the members of the company visited both Red Fort and India Gate. 8 members visited both Taj Mahal and India Gate and 10 members visited both Red Fort and Taj Mahal. In that year, how many of the members had travelled to only one of the three places?

- A. 62 B. 44 C. 18 D. 50 E. None of these

10. To make special tea, milk to water needed is in the ratio of 5 : 3. If a housewife had a mixture of milk and water in which the concentration of milk was 40% , then in what ratio this mixture should be mixed with pure milk to get the mixture suitable to make special tea?

- A. 2 : 3 B. 5 : 3 C. 1 : 2 D. 2 : 1 E. None of these

Correct Answers:

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

Explanations:

1. Let in the bond, the rate of interest = $r\%$ per annum

According to the question, the interest received = Rs. $(105000 - 42000) = \text{Rs. } 63000$

In this question, $R = r\%$ per annum $SI = 63000$ Time = 10 years

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

$$63000 = \frac{42000 \times R \times 10}{100}$$

$$R = \frac{63 \times 10}{42} = 15\%$$

Hence, option C is correct.

2. A's share = Rs. 2000

B's share = Rs. $(2000 - 500) = \text{Rs. } 1500$

C's share = Rs. $(6000 - 2000 - 1500) = \text{Rs. } 2500$

The ratio of share = $2000 : 1500 : 2500 = 4 : 3 : 5$

The ratio of investment = The ratio of profit

Let A, B, and C invested for t_1 , t_2 , and t_3 months respectively

$$8t_1 : 6t_2 = 4 : 3$$

$$t_1 : t_2 = 1 : 1$$

$$6t_2 : 15t_3 = 3 : 5$$

$$t_2 : t_3 = 3 : 2$$

The required ratio = $3 : 3 : 2$

Hence, option C is correct.

3. Two particular players are always chosen it means, $11 - 2 = 9$ players are selected out of the remaining $16 - 2 = 14$ players

The reqd. number of ways = ${}^{14}C_9$

$$= \frac{14 \times 13 \times 12 \times 11 \times 10}{5 \times 4 \times 3 \times 2 \times 1} = 14 \times 13 \times 11 = 2002 \text{ ways}$$

Hence, option E is correct.

4. Let the sides of the triangle = $5x$, $5x$, and $6x$ cm

$$\text{Then, half of the perimeter} = s = \frac{5x + 5x + 6x}{2} = 8x$$

$$\text{The area of the triangle} = \sqrt{s(s-a)(s-b)(s-c)} = 108$$

$$\sqrt{8x(8x-5x)(8x-5x)(8x-6x)} = 108$$

$$\sqrt{8x(3x)(3x)(2x)} = 108$$

$$12x^2 = 108$$

$$x^2 = 9$$

$$x = 3$$

The third side = $6x = 18$ cm = Diameter of the circle

$$\text{The area of the circle} = A = \pi r^2 = \pi \times 9^2 = 81\pi \text{ sq.cm}$$

Hence, option D is correct.

5. In May 2018, the sales = 858 hundred

In May 2017, the sales = 715 hundred

The percentage increase in sales in May 2018 over May 2017

$$= \frac{(858 - 715) \times 100}{715} = \frac{143 \times 100}{715} = 20\%$$

In June 2018, the sale = 20% more than that of May 2018 = 120% of 858 hundred = 1029.6 hundred

Hence, option B is correct.

6. At the end of 2 years, the total amount

$$= x \left(1 + \frac{12}{100}\right)^2 = 1.2544x$$

$$\text{Half of } 1.2544x = 0.6272x$$

The amount at the end of another 1 year @ 12% per annum

$$= 0.6272x \left(1 + \frac{12}{100}\right) = 11032$$

$$0.6272x = \frac{11032 \times 100}{112} = 9850$$

Alternate method :

Go from last

At the rate of 12% per annum, Rs. A become 11032 at the end of 1 year

A = 9850 = The money he withdraws at the end of 2 years

Hence, option B is correct.

7. After losing 6 kg, let the weight of Jackey = x kg

Let the weight of Jara = y kg then $x + y = 45 \times 2 = 90$ kg(i)

Case II:

When Jara loses 5 kg then, the weight of Jara = $y - 5$ kg

The weight of Jackey = $x + 6$ kg

Let the weight of their mother = z kg

Then, $y - 5 + x + 6 + z = 180$ kg

$$x + y + z = 179 \text{ kg}$$

From the equation (i)

$$z = 179 - 90 = 89 \text{ kg}$$

Now we have only one equation, $x + y = 90$ kg

We could not find the two unknowns by one equation

Hence, option E is correct.

8. $x = 24.8y$

Or $x = yn + 4$

$28.8y = yn + 4$ (where n is a positive integer)

We can see that, when x was divided by y then remainder was 4 it means when we divide $x - 4$ by y then our answer will be 24

Therefore, $24 \times y + 4 = x = 24.8y$

$0.8y = 4$

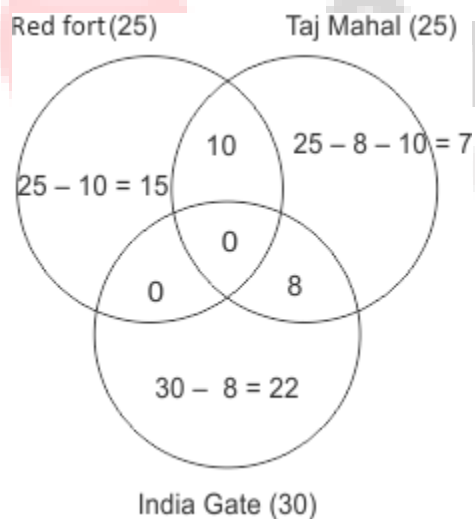
$y = 5$

$x = 24.8 \times 5 = 124$

When x was divided by 17 then the remainder will be 5

Hence, option A is correct.

9.



The required answer = $15 + 7 + 22 = 44$

Hence, option B is correct.

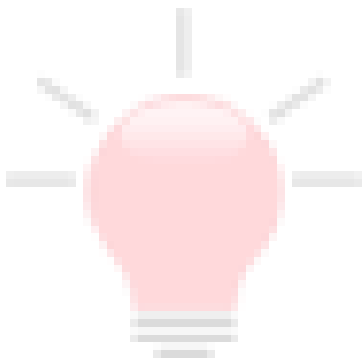
- 10.** In the mixture, the housewife has the ratio of milk: water = 2 : 3 (the concentration of milk in which was 40%)

By mixture and allegation method

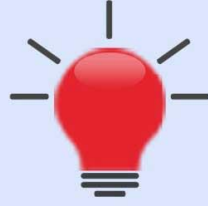
$$\begin{array}{ccc} 2/5 & & 1 \\ & \backslash & / \\ & 5/8 & \\ & / & \backslash \\ 1 - 5/8 = 3/8 & & 5/8 - 2/5 = 9/40 \end{array}$$

$$\text{The reqd. ratio} = \frac{3}{8} : \frac{9}{40} = 5 : 3$$

Hence, option B is correct.



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