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The Question Bank

## Mixed Maths Questions for SBI Clerk Pre, IBPS Clerk Pre, LIC Asst. Pre, RBI Asst. Pre and IBPS RRB Exams.

### SBI Clerk Pre Quant Quiz 9

Directions : Read the following questions carefully and choose the right answer.

- The ratio of the average weight of Reema and Monisha together to that of Monisha and Seema together is 14 : 11. Reema is 10 kg heavier than Monisha and Monisha is 5 kg heavier than Seema. Find the average weight of Seema and Reema?

A. 32.5 kg      B. 25.7 kg      C. 30.2 kg      D. 28.80 kg      E. 22.45 kg
- The ratio of the number of clerks and teachers in a school is 5 : 4. If 20% of the clerks and 25% of teachers have their own vehicles, then what percentage of total clerks and teachers in the school do not have their own vehicles?

A. 64.08%      B. 65.78%      C. 70.78%      D. 77.78%      E. 55.08%
- Ranveer invested same amount in scheme A and B. Both offers same rate of interest but A offers simple interest and B offers compound interest. If after 2 years, Ranveer got Rs. 1000 interest from scheme A and Rs. 1062.5 from scheme B then what is the sum of rate of interest offered by both the schemes?

A. 25%      B. 30%      C. 12.5%      D. 20%      E. None of these
- The age of Sukh is  $z$  years. Geet is 4 years elder than Sukh, Veer is 5 years younger to Sukh. The ratio of age of Geet and Veer 4 years ago is 10 : 7. Find the average of their present age?

A. 28.33 years      B. 29.67 years      C. 34.67 years      D. 24.33 years      E. 39.67 years
- On a particular day, a toy seller sold three types of toys. Each toy of the three varieties costs Rs. 200, Rs. 150 and Rs. 50 respectively. If the total sale on that day was Rs. 600 and the seller sold at least one toy of each variety, find the maximum number of toys he could have sold?

A. 7 toys      B. 6 toys      C. 5 toys      D. 4 toys      E. 8 toys

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6. How many seven lettered words without repetition can be formed using the letters of the word "Mistake" so that no two vowels are together?
- A. 2160                      B. 720                      C. 1440                      D. 2880                      E. 4320
7. A boat goes 60 kms and return on starting point in 20 hours and then again goes 30 kms downstream. If the speed of the current is 4 km/hr, find the total time taken by boat to cover total distance?
- A. 25.5 hours                      B. 20.5 hours                      C. 22.5 hours                      D. 21.5 hours                      E. 27.5 hours
8. Rakhi invested Rs. 2000 in a business. Sonam invested Rs. 2500, but joined after z months. At the end of the year, Sonam's share was Rs. 750 out of the total profit of Rs. 4350, find the value of z?
- A. 4                      B. 6                      C. 2                      D. 10                      E. 8
9. The difference between the selling price of Trouser and Shirt is Rs. 140. The cost price of a trouser is 15% more than cost price of a shirt. The shopkeeper marked up trouser at 20% above the cost price and shirt at 25% above the cost price. Find the difference between marked price of 5 Trousers and 3 shirts, if while sellig shopkeeper allowed discount of 25% on trouser and 20% on shirt?
- A. Rs . 15000                      B. Rs. 14500                      C. Rs. 12500                      D. Rs. 12600                      E. Rs. 14000
10. A and B together can do a piece of work in 20 days, A and C together can do it in 15 days and A alone can do it in 30 days. B and C together work for 10 days and then A also joins them. How much time is taken to complete the entire work?
- A. 12 days                      B. 16 days                      C. 14 days                      D. 15 days                      E. 20 days

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**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>
A	D	A	B	A	C	C	D	D	B

## Explanations:

1. Let the weight of Seema be  $x$ , weight of Monisha is  $(x + 5)$  kg, weight of Reema is  $(x + 15)$  kg

According to the question,

$$\frac{[(x + 15 + x + 5)/2]}{[(x + 5 + x)/2]} = 14 : 11$$

$$\frac{2x + 20}{2x + 5} = \frac{14}{11}$$

$$11(2x + 20) = 14(2x + 5)$$

$$x = 25$$

Seema = 25 kg, Reema = 40 kg

$$\text{Reqd. average weight} = \frac{25 + 40}{2} = 32.5 \text{ kg}$$

Hence, option A is correct.

2. The ratio of the number of clerks and teachers is 5 : 4.

Let the number of clerks and teachers are 50 and 40 respectively.

$$\text{Clerks: } 50 \rightarrow (20\%) \rightarrow \frac{50 \times 20}{100} = 10$$

$$\text{Teachers: } 40 \rightarrow (25\%) \rightarrow \frac{40 \times 25}{100} = 10$$

20 people have their own vehicles.

People who does not have their own vehicle =  $90 - 20 = 70$

$$\text{Reqd. \%} = \frac{70 \times 100}{90} = 77.78\%$$

Hence, option D is correct.

3. Let us suppose that sum Rs. a is invested in both the schemes

The simple interest is offered by scheme A,

$$\frac{a \times R \times 2}{100} = 1000$$

$$aR = 50000 \dots(1)$$

The compound interest is offered by scheme B,

$$a \left\{ \left( 1 + \frac{R}{100} \right)^2 - 1 \right\} = 1062.5 \dots\dots\dots(2)$$

Dividing (1) by (2)

$$\frac{R}{\left( 1 + \frac{R}{100} \right)^2 - 1} = \frac{50000}{1062.5}$$

$$\frac{R}{\left( \frac{R^2}{100^2} + \frac{2R}{100} \right)} = \frac{10000}{212.5}$$

$$\frac{1}{\left( \frac{R}{100^2} + \frac{2}{100} \right)} = \frac{10000}{212.5}$$

Solving through options,

Take R = 25%

$$\Rightarrow \frac{1}{\frac{25}{100^2} + \frac{2}{100}}$$

$$\Rightarrow \frac{400}{9} \neq \frac{160}{3}$$

Take R= 30%

$$\Rightarrow \frac{1}{\frac{30}{100^2} + \frac{2}{100}}$$

$$\Rightarrow \frac{2500}{23} \neq \frac{160}{3}$$

Take R= 12.5%

$$\Rightarrow \frac{1}{\frac{12.5}{100^2} + \frac{2}{100}}$$

$$\Rightarrow \frac{10000}{212.5} = \frac{10000}{212.5}$$

R = 12.5% satisfies the above given condition.

Required sum = 12.5% + 12.5% = 25%

Hence, option A is correct.

**Alternate method:-**

Rs. 1000 is the SI earned in 2 years. So the SI for one year is Rs. 500

Rs. 1062.5 is the CI earned in 2 years.

In CI, for the first year interest will be Rs. 500 and then for the second year interest will be (Rs. 500 + interest on Rs. 500 for the first year)

So the extra Rs. 62.5 is the interest earned on Rs. 500

Therefore, Rate of interest =  $(62.5/500) * 100 = 12.5\%$

Required sum = 12.5% + 12.5% = 25%

Hence, option A is correct.

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4. The age of Sukh =  $z$  years, Geet =  $(z + 4)$  years, Veer =  $(z - 5)$  years

According to the question,

The ratio of age of Geet and Veer 4 years ago is 10 : 7

$$\frac{z + 4 - 4}{z - 5 - 4} = \frac{10}{7}$$

$$z = 30 \text{ years}$$

Sukh's present age = 30 years

Geet's present age = 34 years

Veer's present age = 25 years

$$\text{Reqd. average} = \frac{30 + 34 + 25}{3} = 29.67 \text{ years}$$

Hence, option B is correct.

5. Let the number of toys of each variety sold be  $x$ ,  $y$  and  $z$  respectively.

The total cost is  $200x + 150y + 50z = 600$

He sold at least one of each variety.

Amount received by selling one of each toy is =  $200 + 150 + 50 = 400$

Amount left with him =  $600 - 400 = 200$

For the number of toys sold to be maximum he has to sell toys of the third variety for the remaining amount 200.

For Rs. 200 he can sell  $\frac{200}{50} = 4$  toys of this variety.

The maximum number of toys he can sell =  $1 + 1 + 5 = 7$  toys

Hence, option A is correct.

6. First we arrange the items of the other types – in this case the 4 consonants, which can be arranged in 4! Ways. The vowels can be arranged in the 5 places in  ${}^5P_3$  ways.

The number of words equals =  $4! \times {}^5P_3 = 1440$

Hence, option C is correct.

7. Let the speed of boat be x km/hr

Speed of the current = 4 km/hr

According to the question,

$$\frac{60}{x+4} + \frac{60}{x-4} = 20$$

$$x = 8 \text{ km/hr}$$

Now the boat goes 30 kms downstream,

Time taken to move 30 kms downstream

$$= \frac{30}{8+4} = 2.5 \text{ hours}$$

Total time taken =  $20 + 2.5 = 22.5$  hours

Hence, option C is correct.

8.            Rakhi      Sonam

Investment      2000      2500

Ratio of investment = 4 : 5

Time              12              (12 - z)

Profit               $4 \times 12 = 48$        $5(12 - z)$

Profit              3600      750

Profit ratio =  $3600 : 750 = 24 : 5 = 48 : 5 (12 - z) = 24 : 5$

$$z = 10$$

Hence, option D is correct.



9. Cost price of Trouser is 15% more than cost price of a shirt.

Let the cost price of shirt be Rs.  $100x$  and cost price of Trouser is Rs.  $115x$ .

Marked price of Trouser is 20% above its cost price

$$\text{MRP of Trouser} = (115x) \frac{120}{100} = 138x$$

$$\text{Selling price of Trouser} = 138x \frac{75}{100} = 103.5x$$

$$\text{Selling price of Shirt} = 125x \frac{80}{100} = 100x$$

Difference between the selling price of Trouser and Shirt = 140

$$103.5x - 100x = 140$$

$$3.5x = 140$$

$$x = 40$$

$$\text{Reqd. difference} = [5 \times 138 \times 40 - 3 \times 125 \times 40]$$

$$\rightarrow 27600 - 15000 = 12600$$

Hence, option D is correct.

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10. A and B together can do a piece of work in 20 days.

A alone can do it in 30 days.

B alone can do the work in  $= \frac{1}{20} - \frac{1}{30}$

B alone can do the work in 60 days.

A and C can do the work in 15 days.

C can do the work in = 30 days.

Capacity of the work = LCM {30, 60, 30} = 60 units

Units of work done A in one day =  $\frac{60}{30} = 2$  units

Units of work done by B in one day =  $\frac{60}{60} = 1$  unit

Units of work done by C in one day =  $\frac{60}{30} = 2$  units

Units of work done by B and C together in one day =  $1 + 2 = 3$  units

Units of work done by B and C together in 10 days =  $3 \times 10 = 30$  units

Remaining work =  $60 - 30 = 30$  units

Time taken by A, B and C to do 30 units of work

$= \frac{30}{2 + 1 + 2} = 6$  days

Total time =  $10 + 6 = 16$  days

Hence, option B is correct.

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