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## Time and work Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams.

### Time and work Quiz 14

Directions: Study the following Questions carefully and choose the right answer:

1. The hourly wages of a mason have increased by 25%. Since the increase, the number of hours he works daily has reduced by 16%. If he was earning Rs. 120 per day before the increase, how much (in Rs.) is he earning now?

- A. 124.5                      B. 115.5                      C. 126                      D. 120                      E. None of these

2. Radhe does 70% of some work in 15 days. Later, with Shyam's help, she completes the remaining work in 4 days. In how many days can Shyam alone complete the entire work?

- A. 35 days                      B. 35.2 days                      C. 35.3 days                      D. 38.4 days                      E. None of these

3. A and B undertake a project worth Rs. 54000 . A alone can do the work in 10 days. They work together for 3 days. After 3 days, B works alone for 3 days and A completes the remaining work in 3 more days. What is the share of B in the earnings?

- A. Rs. 21600                      B. Rs. 33400                      C. Rs. 27800                      D. Rs. 35780                      E. None of these

4. If the ratio of speed of doing work of three persons is 1 : 3 : 5, what is the ratio of time taken by these people to do the same amount of work?

- A. 15 : 5 : 7                      B. 3 : 15 : 5                      C. 15 : 3 : 5                      D. 15 : 5 : 3                      E. None of these

5. It takes 6 workers a total of 10 hours to assemble a computer, with each working at the same rate. If six workers start at 9.00 am, and one worker per hour is added beginning at 3.00 pm, at what time will the computer assembled?

- A. 5.00 pm                      B. 5.30 pm                      C. 6.00 pm                      D. 7.00 pm                      E. None of these

6. 12 students working for 5 hours a day can solve a certain number of problems in 8 days. How many boys are needed to solve five times the original number of problems, if they work at 4 hours a day for 15 days?

- A. 90                      B. 45                      C. 40                      D. 100                      E. None of these

7. A Volvo tourist bus with only the driver inside has a speed of 80 kmph. Its maximum speed reduces by a quantity which is directly proportional to the number of passengers (excluding the driver) seated inside. The maximum speed of the bus reduces by 20 kmph, if there are 5 passengers. A maximum of how many passengers should be seated so that the bus can move?

- A. 20                      B. 19                      C. 25                      D. 17                      E. None of these

8. Tony, Monu and James completed a work together in 36 days and received a total payment of Rs. 54000. Tony took half of the total money, Monu took one third and James took remaining. In how many days, Tony and James would have finished the work if Monu was not working?

- A. 72 days                      B. 54 days                      C. 96 days                      D. 64 days                      E. None of these

9. 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

10. A construction company has  $\frac{100}{3}\%$  of its employees as women. 50% of these women are married and  $\frac{100}{3}\%$  of married women have children. 75% of the men are married and  $\frac{200}{3}\%$  of married men have children. If no two employees are married to each other what fraction of the employees do not have children?

- A.  $\frac{13}{18}$                       B.  $\frac{11}{18}$                       C.  $\frac{17}{18}$                       D.  $\frac{7}{18}$                       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>
C	C	A	D	C	C	B	B	B	B

## Explanations:

1. Daily wages = hourly wages  $\times$  work hours.

Let the original hourly wages and work hours be Rs.  $x$  and  $y$  hours respectively.

Since he used to earn Rs. 120 earlier,  $xy = 120$

New hourly wages = Rs.  $(1.25x)$  and new working hours =  $0.84y$

$\therefore$  New daily wages =  $(1.25x)(0.84y) = 1.05xy = 1.05 \times 120 = \text{Rs. } 126$

Hence, option C is correct.

2. Let total work = 150 units

Since Radhe does 70% of the work (i.e. 105 units) in 15 days,

$$\text{Radhe} = \frac{105}{15} = 7 \text{ units per day}$$

Work left =  $150 - 105 = 45$  units

Let Shyam do  $x$  units of work per day. Shyam and Radhe finish the pending work in 4 days.

$$\therefore 4(x + 7) = 45$$

$$\therefore 4x = 45 - 28 = 17 \text{ i.e. } x = 4.25 \text{ units}$$

$$\therefore \text{Time taken by Shyam to complete the work} = 150/4.25 = 35.29 \approx 35.3 \text{ days}$$

**Note** that 0.3 is equivalent to  $5/17$  (among the options).

Hence, option C is correct.

3. A can do 10% work in a day. A has worked 6 days in total. And so has B

A completed 60% work in 6 days and B did 40% in 6 days.

Efficiency of A and B =  $6 : 4$

$$\text{B's share} = \frac{4}{10} \times 54000 = 21600$$

Hence, option A is correct.

4. Let the speed of doing work of the three persons be  $1x$ ,  $3x$  and  $5x$  respectively

Time taken by each person = amount of work done/speed of doing work

Let the amount of work for each person =  $y$  ( $\because$  work done is same)

The time taken by the first person =  $\frac{y}{x}$

The time taken by the second person =  $\frac{y}{3x}$

The time taken by the third person =  $\frac{y}{5x}$

The ratio of time taken =  $\frac{y}{x} : \frac{y}{3x} : \frac{y}{5x}$

$$\Rightarrow 1 : \frac{1}{3} : \frac{1}{5} = 15 : 5 : 3$$

Hence, option D is correct.

5. 6 workers complete some work in 10 hours.

$\therefore$  1 worker completes the same work in 60 hours.

Let the total work be equivalent to 60 man-hours.

From 9.00 am to 3.00 pm, all 6 workers work together for 6 hours.

$\therefore$  Amount of work done by 6 workers in 6 hours is  $6 \times 6 = 36$  man-hours

From 3.00 pm to 4.00 pm, 7 man-hours of work will be done.

From 4.00 pm to 5.00 pm, 8 man-hours of work will be done.

From 5.00 pm to 6.00 pm, 9 man-hours of work will be done.

Thus, total amount of work done up to 6.00 pm is  $36 + 7 + 8 + 9 = 60$  man-hours

Thus, the computer will be assembled at 6.00 pm.

Hence, option C is correct.

**6.** Work done = Number of students  $\times$  Hours worked per day  $\times$  Number of days worked

Here, the work to be done is 'solving n number of problems'. Since, the number of problems to be solved in the second case is five times the original number of problems to be solved in the first case, the work done in the second case is five times the work done in the first case.

Let the number of students required in the second case be x.

$$\therefore \frac{w}{5w} = \frac{12 \times 5 \times 8}{x \times 4 \times 15}$$

$$= 40$$

Thus, 40 students will be required.

Hence, option C is correct.

**7.** If R is the reduction in maximum speed and N is the number of passengers, then R is proportional to N

$\Rightarrow R = NK$  where K is constant of proportionality,

Given data:  $R = 20$ , when  $N = 5$ , hence  $K = 4$

Maximum number of passenger that bus can't move =  $(80 - N \times K) = 80 - N \times 4 \Rightarrow N = 20$

So number of passenger for bus just move =  $20 - 1 = 19$

Hence correct option (B) is correct.

**8.** Tony, Monu and James completed a work together in 36 days.

In one day, together they will finish  $\frac{1}{36}$  of work.

Out of Rs. 54000, Tony took half of the total money, Monu took one third and James took remaining.

The shares of Tony, Monu and James are in ratio

$$\frac{1}{2} : \frac{1}{3} : \left(1 - \frac{1}{2} - \frac{1}{3}\right) \text{ i.e., } 3 : 2 : 1.$$

We know that efficiencies are in the same ratio as the share received in total amount.

Let us suppose that work done by Tony, Monu and James in one day is  $3T$ ,  $2T$  and  $T$ , respectively.

$$\Rightarrow 3T + 2T + T = \frac{1}{36}$$

$$\Rightarrow 6T = \frac{1}{36}$$

$$\Rightarrow T = \frac{1}{216}$$

$$\text{Work done by Tony in one day} = 3T = \frac{3}{216} = \frac{1}{72}$$

$$\text{Work done by James in one day} = T = \frac{1}{216}$$

Let us suppose that when Tony and James work together, they take  $N$  days to finish the work.

$$\Rightarrow \frac{N}{72} + \frac{N}{216} = 1$$

$$\Rightarrow \frac{4N}{216} = 1 \Rightarrow N = 54$$

$\therefore$  When Tony and James work together, they take 54 days to finish the work.

Hence, option B is correct.

**9.**

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

Since remaining work must be completed by P

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

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

Hence option B is correct.

**10.** Let 90 be the no. employees in the company

$$\text{Therefore, total women employees} = \frac{90}{3} = 30$$

$$\left\{ \text{as } \frac{100}{3}\% = \frac{1}{3} \right\}$$

$$\text{As no. of women married} = 50\% \text{ of } 30 = 15$$

$$\text{No. of married women having children} = \frac{100}{3}\% \text{ of } 15 = 5$$

$$\text{No. of married women not having children} = 15 - 5 = 10$$

$$\text{Now, total male employees} = \text{total} - \text{no. of women} = 90 - 30 = 60$$

$$75\% \text{ of men are married} = 75\% \text{ of } 60 = 45$$

$$\text{No. of married men having children} = \frac{200}{3}\% \text{ of } 45 = 30$$

$$\text{No. of married men not having children} = 45 - 30 = 15$$

Now total married employees not having children in the company = no. of unmarried men and women + men and women not having children

$$= 15 + 15 + 10 + 15 = 55$$

$$\text{Required fraction} = \frac{55}{90} = \frac{11}{18}$$

Hence, option (B) is correct.





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