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## Time and work Questions for Bank Clerk Pre Exams.

### Time and work Quiz 5

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

1. A takes three times as long as B and C together to do a job. B takes four times as long as A and C together to do the same work, If all three, working together can complete the job in 24 days, then the number of days, A alone will take to finish the job is:

- A. 100                      B. 96                      C. 95                      D. 90                      E. None of these

2. A can do piece of work in 8 days which B can destroy in 3 days. A has worked for 6 days, during the last 2 days of which B has been destroying. How many days must A now work alone to complete the work?

- A. 7 day                      B.  $7\frac{2}{3}$  days                      C.  $7\frac{1}{3}$  days                      D. 8 days                      E. None of these

3. 4 boys and 3 women can do a piece of work in 6 days while 2 boys and 4 women can do the same piece of work in 9 days. How much time will be taken by 7 boys and 9 women to do the same piece of work?

- A. 3 days                      B. 7 days                      C. 8 days                      D. 12 days                      E. None of these

4. Working alone, Typewriters A, B, C can do a certain typing job, consisting of a large number of pages, in 12, 15 and 18 hours, respectively. What is the ratio of the time it takes Typewriter A to do the job, working alone at its rate, to the time it takes Type writer B and C to do the job, working together at their individual rate?

- A.  $\frac{4}{11}$                       B.  $\frac{1}{2}$                       C.  $\frac{15}{22}$                       D.  $\frac{22}{15}$                       E. None of these

5. A, B and C can do a piece of work in 4, 7 and 8 days respectively. They undertook to finish the work together for Rs. 53650. Find the difference (in Rs.) between the share of A and that of B.

- A. 10100                      B. 11100                      C. 11650                      D. 12560                      E. None of these

6. 7 men and 9 women can earn Rs. 3288 in 8 days. 9 men and 5 women can earn Rs. 2106 in 6 days. In how many days will 6 men and 5 women earn Rs. 1116?

- A. 4 days                      B. 6 days                      C. 8 days                      D. 9 days                      E. None of these

7. A man is Thrice as fast as a woman and a woman is twice as fast as a boy in doing a work. If all of them, a man, a woman and a boy can finish the work in 9 days, in how many days a boy will do it alone ?

- A. 81 days                  B. 9 days                  C. 6 days                  D. 27 days                  E. None of these

8. Nitin and Nirdosh can do a piece of work in 45 days and 40 days respectively. They began to work together but Nitin leaves after 'x' days and Nirdosh finished the rest of the work in (x + 14) days. After how many days did Nitin leave?

- A. 11 days                  B. 12 days                  C. 13 days                  D. 9 days                  E. None of these

9. A garrison of 6600 men had provisions for 64 days at the rate of 1700 g per head. At the end of 14 days, reinforcement arrives and it was found that the provision will last 34 days more at the rate of 1650 g per head. What is the strength of the reinforcement?

- A. 3400                  B. 6800                  C. 3300                  D. 3500                  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>
B	C	A	D	B	A	A	D	A	B

**Explanations:****1. Approach I:**

Time taken by A : Time taken by B and C together = 3 : 1

Therefore, 1 day's work done by A : 1 day's work done by B and C together = 1 : 3

[Because work done or efficiency is inversely proportional to time taken.]

We can further write the equation as

1 day's work done by A : 1 day's work done by A, B and C together = 1 : 4

Therefore, time taken by A : Time taken by A, B and C together = 4 : 1

Here we can observe that if A, B and C working together takes 1 day, A alone is taking 4 days which means he is taking 4 times the time taken by A, B and C together.

Therefore, actual time taken by A alone =  $4 \times 24 = 96$  days

**Approach II:**

Let 1 day's efficiency of each of the individuals is A, B and C respectively.

As per the given information, we get the efficiency equations as follows

$$3A = (B + C) \dots(i)$$

$$A + B + C = 24 \dots(ii)$$

Putting  $3A$  in place of  $(B + C)$  in equation (ii), we get

$$A + 3A = 24$$

$$4A = 24$$

Now,  $4A$  do the whole work in 24 days.

Therefore, A alone will do the whole work in  $24 \times 4 = 96$  days.

Hence, option B is correct.

**2.**

$$A's \text{ 1 day's efficiency} = \frac{1}{8}$$

$$B's \text{ 1 day's efficiency} = -\frac{1}{3}$$

Let's assume A takes  $x$  more days to complete the work.

The equation will be like

$$= \frac{(6+x)}{8} - \frac{2}{3} = 1$$

$$= \frac{(6+x)}{8} = 1 + \frac{2}{3} = \frac{5}{3}$$

$$\Rightarrow 3(6+x) = 40$$

$$\Rightarrow 18 + 3x = 40$$

$$\Rightarrow 3x = 22$$

$$\therefore x = \frac{22}{3} = 7\frac{1}{3} \text{ days}$$

Hence, option C is correct.

**3.** As per the given information, work done by 4 boys and 3 women in 6 days must be equal to work done by 2 boys and 4 women in 9 days.

Therefore, we get

$$(4B + 3W) \times 6 = (2B + 4W) \times 9$$

$$\Rightarrow 24B + 18W = 18B + 36W$$

$$\Rightarrow 6B = 18W \Rightarrow 1B = 3W$$

$$\text{Now, } 2B + 4W = (2 \times 3)W + 4W = 10W$$

$\Rightarrow$  10 women do a piece of work in 9 days.

$$\text{Similarly, } 7B + 9W = (7 \times 3)W + 9W = 30W$$

Now, when 10 women do a piece of work in 9 days,

30 women (thrice of 10) will do the same piece of work in 3 days ( $\because$  Time  $\propto$  1/Efficiency ).

Hence, option A is correct.

**4.** Since Typewriter B can do the job in 15 hours,

it can do  $\frac{1}{15}$  of the job in 1 hour.

Since Typewriter C can do the job in 18 hours

it can do  $\frac{1}{18}$  of the job in 1 hour.

Together Typewriters B and C can do

$$\left(\frac{1}{15} + \frac{1}{18}\right) = \left(\frac{6}{90} + \frac{5}{90}\right) = \frac{11}{90} \text{ of the job in 1 hour}$$

Which means that it takes them =  $\frac{90}{11}$  hours

To complete the job. Since Typewriter A completes the job in 12 hours, the ratio of the time required for A to do the job to the time required for B and C working together to do the job is

$$\frac{12}{\frac{90}{11}} = \frac{12(11)}{90} = \frac{2(11)}{15} = \frac{22}{15}$$

Hence, option (D) is correct.

**5.** We know that

The ratio of shares of A, B and C = The ratio of their efficiencies

$$= \frac{1}{4} : \frac{1}{7} : \frac{1}{8}$$

$$= \frac{14}{56} : \frac{8}{56} : \frac{7}{56} = 14 : 8 : 7$$

Difference between the shares of A and B in ratio  $\frac{6}{29}$

$$\therefore \text{ Actual difference in value} = \frac{6}{29} \times 53650 = 11,100/-$$

Hence, option B is correct.

6. Let the earnings of a man be  $x$  and that of a woman be  $y$ .

$$\therefore 7x + 9y = \frac{3288}{8} = 411 \quad \dots(\text{i})$$

$$\therefore 9x + 5y = \frac{2106}{6} = 351 \quad \dots(\text{ii})$$

From the eqn. (i) and (ii), we get  $x = 24$  and  $y = 27$   $\therefore$  Earnings of six men and five women =  $6 \times 24 + 5 \times 27 = 144 + 135 = 279$

$$\therefore \text{Number of days} = \frac{1116}{279} = 4 \text{ days}$$

Hence, option A is correct.

7. According to the question, 1 man  $\equiv$  3 women  $\equiv$  6 boys  $\therefore$  1 man + 1 woman + 1 boys = (6 + 2 + 1) boys = 9 boys Applying the chain-rule formula  $M_1D_1 = M_2D_2 \Rightarrow 9 \times 9 = 1 \times D_2 \Rightarrow D_2 = 81$  days

Hence, option A is correct.

8. As per the given information, Nitin's  $x$  days' efficiency + Nirdosh's  $\{x + (x + 14)\}$  days' efficiency = 1

$$\Rightarrow \frac{x}{45} + \frac{x + x + 14}{40} = 1$$

$$\Rightarrow \frac{8x + 9(2x + 14)}{360} = 1$$

$$\Rightarrow 8x + 18x + 126 = 360 \Rightarrow 26x = 234$$

$$\therefore x = \frac{234}{26} = 9 \text{ days}$$

Hence, option D is correct.

9. The given problem takes the form as follows : 6600 men taking 1700 g per head have provision for (64 - 14) = 50 days how many men taking 1650 g per head have provision for 34 days ? Less provision per head, More men (Indirect) Less days, More men (Indirect)

$$\left. \begin{array}{l} \text{Provision } 1650 : 1700 \\ \text{Days } 18 : 24 \end{array} \right\} : : 6600 : x$$

$$\therefore 1650 \times 34 \times x = 1700 \times 50 \times 6600$$

$$\therefore x = \frac{1700 \times 50 \times 6600}{1650 \times 34} = 10000$$

$$\therefore \text{Strength of reinforcement} = 10000 - 6600 = 3400$$

Hence, option A is correct.

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

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

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

As no. of women married = 50% of 30 = 15

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

No. of married women not having children = 15 - 5 = 10

Now, total male employees = total - no. of women = 90 - 30 = 60

75% of men are married = 75% of 60 = 45

No. of married men having children

$$= \frac{200}{3}\% \text{ of } 45 = 30$$

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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