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

Time and work Quiz 12

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

1. Two persons Aman and Bhanu can dig a pit in 20 days and 25 days respectively and a third person Cheenu can fill that pit in 50 days. All of the three persons start their work and after sometime Cheenu leaves the work. If total time taken to dig the pit from the beginning is 13 days, find after how many days Cheenu left his work?

A. 8.5 days   B. 7.5 days   C. 9.5 days   D. 8 days   E. None of these

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2. Rohan takes twice the time taken by Sohan to complete a piece of work and half of the time taken by Mohan to complete the work. If all of them working together can complete the work in 12 days, in how many days Rohan and Sohan working together can complete that work?

A. 12 days   B. 14 days   C. 21 days   D. 25 days   E. None of these

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3. 5 Men can do a piece of work in 6 days. 6 Women can do 40% of same work in 4 days and 3 Children can do 75% of same work in 6 days. If 2 Men, 3 Women and 1 Child start work alternately, then who will be the last to complete the work?

A. Men   B. Women   C. Child   D. Can't be determined
E. None of these

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4. A can do a piece of work in 18 days, B can do it in 24 days and C can do it in 60 days. Efficiency of D is twice the efficiency of C. If A worked for 2 days, B worked for 4 days and C worked for 6 days. How many days will D take to complete the remaining work alone?

A. $28\frac{2}{3}$ days   B. $28\frac{3}{4}$ days   C. $18\frac{2}{3}$ days   D. $18\frac{3}{4}$ days   E. None of these

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5. A, B and C can do a piece of work in 12, 18 and 24 days, respectively. They all begin together. A work continuously till it is finished, B leaves the work 2 days before its completion and C leaves the work 4 days before its completion. In what approximate time is the work finished?

A. 4 days   B. 7 days   C. 5 days   D. 9 days   E. None of these

6. A contractor decided to complete a work in 90 days. He employed 250 men at the beginning and another 150 men after 60 days and completed the work in stipulated time. Had he not employed the additional men, what percent more time he would have taken to finish the work?

A. 27%   B. 30%   C. 20%   D. 50%   E. None of these

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7. A, B and C working alone can complete a piece of work in 12, 15 and 20 days respectively.Each one does equal amount of work one by one. As soon as one's part of work is done, the one can leave. In how many days will the work get finished?

A. $11\frac{2}{3}$ days   B. $13\frac{2}{3}$ days   C. $15\frac{2}{3}$ days   D. $9\frac{2}{3}$ days   E. None of these

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8. Amar, Akbar and Anthony take up a task to finish for Rs. 876. Amar completes his assignment in 4 days, Akbar does it in 8 days and Anthony takes 12 days to finish it. They complete the work with the help of their mother Nirupama in 2 days. What does Nirupama get?

A. Rs. 307   B. Rs. 73   C. Rs. 75   D. Rs. 267   E. None of these

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9. A certain piece of work done by Raghu and Rajeev separately in 4 and 5 days respectively, whereas Ranvijay ruined it in 3 days. How long will it take to the 4/5th of a work done or ruined, if all the three people start together?

A. $2\frac{5}{7}$ days   B. $6\frac{2}{7}$ days   C. $6\frac{6}{7}$ days   D. Can't be determined
E. None of these

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10. A and B together can finish a piece of work in 10 days, B and C together do it in 12 days whereas A and C together finish it in 20 days. What is the respective ratio of the number of days taken by A when completing the same work alone to the number of days taken by C when completing the same work alone?

A. 2 : 3   B. 1 : 4   C. 1 : 3   D. 3 : 4   E. None of these

Correct Answers:

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

Explanations:

1. Let total work is LCM of 20, 25 and 50 days = 100 units

1 day work of Aman , Bhanu and Cheenu is 5 units, 4 units and 2 units. But the nature of work of Cheenu is opposite to that of Aman and Bhanu.

Let Cheenu work for 'x' days and remaining days in which only Aman and Bhanu work is (13 − x) days.
According to question-
$\Rightarrow$ x × (5 + 4 − 2) + (13 − x) × (5 + 4) = 100
$\Rightarrow$ x = 8.5 days
Hence Cheenu left the work after 8.5 days.
Therefore, option (A) is correct.

2. Let the time taken by Sohan to complete the work = x days
Then, time taken by Rohan to complete the work = 2x days and
time taken by Mohan to complete the work = 4x days
According to the question:

$$12 \left(\frac{1}{x} + \frac{1}{2x} + \frac{1}{4x} \right) = 1$$

$$\Rightarrow \frac{4 + 2 + 1}{4x} = \frac{1}{12}$$

$$\Rightarrow \frac{7}{4x} = \frac{1}{12}$$

$\Rightarrow$ x = 21 days

Hence,
time taken by Sohan to complete the work = x = 21 days
time taken by Rohan to complete the work = 2x = 2 x 21 = 42 days
time taken by Mohan to complete the work = 4x = 4 x 21 = 84 days
let the no of days taken by Rohan and Sohan to complete the work = p days
According to the question:

$$p \left(\frac{1}{21} + \frac{1}{42} \right) = 1$$

$$\Rightarrow p \frac{1 + 2}{42} = 1$$

$\Rightarrow$ p = 14 days
Hence, option B is correct.

3. 5 Men = 6 days

2 Men = $\dfrac{6 \times 5}{2}$ = 15 days

6 Women = 10 days

3 Women = $\dfrac{10 \times 6}{3}$ = 20 days

3 Children = 8 days
1 Children = 8 × 3 = 24 days
Total work = LCM of 15, 20 and 24 = 120
2 Men's one day's work = 8
3 Women's one day's work = 6
1 Child's one day's work = 5
Total work of 3 days = 19
Total work of 18 days = 114
Now, it's 2 Men's terms
So, 2 Men will be the last to complete the work.
Hence, option (A) is correct.

4.

Work done by A in one day = $\dfrac{1}{18}$

Work done by B in one day = $\dfrac{1}{24}$

Work done by C in one day = $\dfrac{1}{60}$

Since, efficiency of D is twice the efficiency of C, work done by D in one day = $\dfrac{1}{30}$

Remaining work = $1 - \dfrac{2}{18} - \dfrac{4}{24} - \dfrac{6}{60} = \dfrac{28}{45}$

Let the time taken by D to complete the remaining work alone = x days

$\dfrac{x}{30} = \dfrac{28}{45}$

$\Rightarrow 18\dfrac{2}{3}$ days

Hence, option C is correct.

5. Let the work is finished in x days

Work done by A in 1 day = $\dfrac{1}{12}$

Work done by B in 1 day = $\dfrac{1}{18}$

Work done by C in 1 day = $\dfrac{1}{24}$

$\dfrac{x}{12} + \dfrac{x-2}{18} + \dfrac{x-4}{24} = 1$

$\Rightarrow \dfrac{x}{12} + \dfrac{x}{18} - \dfrac{2}{18} + \dfrac{x}{24} - \dfrac{4}{24} = 1$

$\Rightarrow \dfrac{x}{12} + \dfrac{x}{18} + \dfrac{x}{24} = 1 + \dfrac{1}{9} + \dfrac{1}{6}$

$\Rightarrow \dfrac{6x + 4x + 3x}{72} = \dfrac{18 + 2 + 3}{18}$

$\Rightarrow \dfrac{13x}{72} = \dfrac{23}{18}$

$\Rightarrow$ x = 7.07 ≈ 7 days

Hence, option B is correct.

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6. Let 250 men alone can complete the work in x days

According to the question
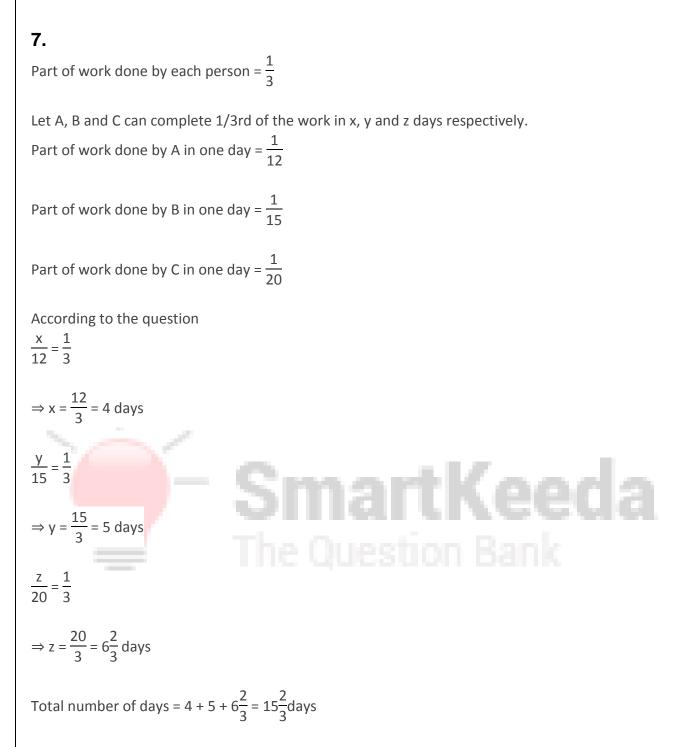
250 × 60 + (250 + 150) × (90 − 60) = 250 × x

$\Rightarrow$ 15000 + 12000 = 250 × x

$\Rightarrow$ x = $\dfrac{27000}{250}$ = 108 days

Reqd. percentage = $\dfrac{108 - 90}{90}$ × 100 = 20%

Hence, option (C) is correct.

7.

Part of work done by each person = $\dfrac{1}{3}$

Let A, B and C can complete 1/3rd of the work in x, y and z days respectively.

Part of work done by A in one day = $\dfrac{1}{12}$

Part of work done by B in one day = $\dfrac{1}{15}$

Part of work done by C in one day = $\dfrac{1}{20}$

According to the question

$\dfrac{x}{12} = \dfrac{1}{3}$

$\Rightarrow x = \dfrac{12}{3} = 4$ days

$\dfrac{y}{15} = \dfrac{1}{3}$

$\Rightarrow y = \dfrac{15}{3} = 5$ days

$\dfrac{z}{20} = \dfrac{1}{3}$

$\Rightarrow z = \dfrac{20}{3} = 6\dfrac{2}{3}$ days

Total number of days = $4 + 5 + 6\dfrac{2}{3} = 15\dfrac{2}{3}$ days

Hence, option C is correct.

8. Let Nirupama completes the work in x days. The efficiency equation will be as follows:

2 days' work done by all the four persons working together = 1

$$2\left(\frac{1}{4}+\frac{1}{8}+\frac{1}{12}+\frac{1}{x}\right) = 1$$

or $\frac{1}{4}+\frac{1}{8}+\frac{1}{12}+\frac{1}{x}=\frac{1}{2}$

or $\frac{6+3+2}{24}+\frac{1}{x}=\frac{1}{2}$

or $\frac{11}{24}+\frac{1}{x}=\frac{1}{2}$

or $\frac{1}{x}=\frac{1}{2}-\frac{11}{24}=\frac{12-11}{24}$

$\Rightarrow \frac{1}{x}=\frac{1}{24}$

∴ Ratio of wages $=\frac{1}{4}:\frac{1}{8}:\frac{1}{12}:\frac{1}{24}=6:3:2:1$

Now, Sum of the terms of ratio = 6 + 3 + 2 + 1 = 12

∴ Share of Nirupama $=\frac{1}{12}\times 876$ = Rs. 73

Hence, option B is correct.

9.

Word done in 1 day $=\frac{1}{4}+\frac{1}{5}-\frac{1}{3}$

$=\frac{15+12+-20}{60}=\frac{7}{60}$

∵ $\frac{7}{60}$ part is done = 1 day

$\Rightarrow$ 1 complete piece of work is done $=\frac{60}{7}$ days

$\Rightarrow \frac{4}{5}$th part of the work is done $=\frac{60}{7}\times\frac{4}{5}$

$=\frac{48}{7}=6\frac{6}{7}$ days will be taken for the work to be done

Hence, option C is correct.

10. According to the question,

$$\frac{1}{A} + \frac{1}{B} = \frac{1}{10} \quad \text{...(i)}$$

$$\frac{1}{B} + \frac{1}{C} = \frac{1}{12} \quad \text{...(ii)}$$

and $\dfrac{1}{C} + \dfrac{1}{A} = \dfrac{1}{20} \quad \text{...(iii)}$

Adding eqn. (i), (ii) and (iii), we get

$$2\left(\frac{1}{A} + \frac{1}{B} + \frac{1}{C}\right) = \frac{1}{10} + \frac{1}{12} + \frac{1}{20}$$

$$\Rightarrow \frac{1}{A} + \frac{1}{B} + \frac{1}{C} = \frac{7}{60} \quad \text{....(iv)}$$

Subtracting Eqn. (ii) from Eqn.(iv), we get

$$\frac{1}{A} = \frac{7}{60} - \frac{1}{12} = \frac{2}{60} = \frac{1}{30}$$

Therefore, A will take 30 days to finish the whole work working alone.
Now, Subtracting Eqn. (i) from Eqn.(iv), we get

$$\frac{1}{C} = \frac{7}{60} - \frac{1}{10} = \frac{7-6}{60} = \frac{1}{60}$$

Therefore, C will take 60 days to finish the whole work working alone.

∴ Reqd. ratio of days = 30 : 60 = 1 : 2

Hence, option E is correct.