

8th Time and work Test Paper-2

1. A tap can fill an oil tank in 15 hours. After half the oil tank is filled, nine more similar taps are opened. What is the total time taken to fill the oil tank completely?

- (a) 8 hrs 15 min (b) 3 hrs 45 min
(c) 4 hrs (d) 4 hrs 15 min

Solution:

A tap can fill an oil tank in 15 hours

Half tank will be filled in $7\frac{1}{2}$ hours = 7hr 30 min

$$10 \text{ Tap,s } 1 \text{ hr work} = \frac{1}{15} \times 10 = \frac{2}{3}$$

So 10 taps fill whole tank in $\frac{3}{2}$ hr

Then, 10 taps fill $\frac{1}{2}$ tank in $\frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$ hr

$$= \frac{3}{4} \times 60 = 45 \text{ min}$$

Total time = 7hr 30 min + 45 mins = 8 hours 15 mins

2. Two pipes can fill a tank in 10 hours and 12 hours respectively, while a third pipe empties the full tank in 20 hours. If all the three pipes operate simultaneously, in how much time will the tank be full?

- (a) 7 hrs 15 mm (b) 7 hrs 30 mm
(c) 7 hrs 45 mm (d) 8 hrs

Solution:

$$\begin{aligned} \text{All three pipes } 1 \text{ hr work} &= \frac{1}{10} + \frac{1}{12} - \frac{1}{20} \\ &= \frac{6 + 5 - 3}{60} = \frac{8}{60} = \frac{2}{15} \end{aligned}$$

So tank filled in $\frac{15}{2}$ hr = 7 hrs 30 min

3. One tap can fill a water tank four times as fast as another tap. If together the two taps can fill the water tank in 30 minutes then how much time will the slower tap alone take to fill the water tank?

- (a) 81 min (b) 108 min
(c) 150 min (d) 192 min

Solution:

Let one tap fill tank in x min

other tap fill tank in $\frac{x}{4}$ min

$$\text{Both } 1 \text{ min work} = \frac{1}{x} + \frac{4}{x} = \frac{5}{x}$$

$$A/Q \frac{5}{x} = \frac{1}{30} \Rightarrow x = 150 \text{ min}$$

Hence slower tap fill tank 2 hr 30 min

4. A can do a piece of work in 15 days .B is 50% more efficient than A. Then How many days B can finish it?

Solution:

(a) 10 days (b) $7\frac{1}{2}$ days

(c) 12 days (d) $10\frac{1}{2}$ days

Solution: A's 1 day work $\frac{1}{15}$

Then B's 1 day work = 150% of A's 1 day work

$$= \frac{150}{100} \times \frac{1}{15} = \frac{1}{10}$$

Then B can finish it in 10 days

5. A does 20% less work than B. If A can finish a piece of work in $7\frac{1}{2}$ hrs. Then B can finish it

in (a) 5 hrs (b) $5\frac{1}{2}$ hrs

(c) 6 hrs (d) $6\frac{1}{2}$ hrs

Solution: Let B's 1 day work $\frac{1}{x}$

$$\text{Then, A's 1 day work } 80\% \text{ of } \frac{1}{x} = \frac{80}{100x} = \frac{4}{5x}$$

But, A's 1 day work $\frac{2}{15}$

$$\frac{4}{5x} = \frac{2}{15} = x = \frac{15 \times 4}{5 \times 2} = 6 \text{ hrs}$$

Then B can finish it in 10 days

6. A work twice as fast as B. If both of them can together finish a piece of work in 12 days, then B alone can do it in ?

- (a) 24 days (b) 27 days
(c) 36 days (d) 48 days

Solution:

Let B's 1 day work $\frac{1}{x}$ and

Then, A's 1 day work $= \frac{2}{x}$

A/Q Both 1 day work $= \frac{1}{12}$

But, Both 1 day work $= \frac{1}{x} + \frac{2}{x} = \frac{3}{x}$

$$\frac{1}{12} = \frac{3}{x} = x = 36 \text{ days}$$

Then B alone can do it in 36 days

7. A take 50% more time B to complete a work. If together they takes 18 days to finish it. How much time shall B take to do it alone?

- (a) 30 days (b) 35 days
(c) 40 days (d) 45 days

Solution:

Let B completes work in x days

Then A completes work in 150% of $x = \frac{3x}{2}$ days

Both 1 day work $= \frac{1}{x} + \frac{2}{3x} = \frac{3+2}{3x} = \frac{5}{3x}$

A/Q Both 1 day work $= \frac{1}{18} = \frac{5}{3x} \Rightarrow x = \frac{5 \times 18}{3} =$

30 days

Hence, B take 30 days to finish it alone

8. Sumit is twice as good workman as Amit. Sumit finished a piece of work in 3 hours less than Amit. In how many hours could they have finished that piece of work working together?

- a] 2.5 hr. b] 4 hr.
c] 2 hr. d] 6 hr.

Solution:

Let Amit's 1 day work $\frac{1}{x}$ and

Then, Sumit's 1 day work $= \frac{2}{x}$

A/Q,

Time taken by Sumit to finished work

= Time taken by Amit - 3

$$\frac{x}{2} = x - 3 \Rightarrow x - \frac{x}{2} = 3$$

$$\Rightarrow \frac{x}{2} = 3 \Rightarrow x = 6 \text{ hrs}$$

$$\text{Both 1 hr work} = \frac{1}{x} + \frac{2}{x} = \frac{3}{x} = \frac{3}{6} = \frac{1}{2}$$

So, They Finish work in 2 hrs

9. A can do a work in 9 days. If B is 50% more efficient to A, then in how many days can B do the same work?

- a] 13.5 b] 4.5
c] 6 d] 3

Solution:

$$\text{B's 1 day work} = 150\% \text{ of } \frac{1}{9} = \frac{150}{9 \times 100} = \frac{1}{6}$$

B do the same work in 6 days

10. Some persons can do a piece of work in 12 days. In how many days will two times the number of such persons will do half of that work?

- a] 6 days b] 4 days
c] 12 days d] 3 days

Solution:

$$\text{Let x person 1 day work} = \frac{1}{12}$$

$$2x \text{ persons 1 day work} = 2/12 = 1/6$$

So, 2x men complete work in 6 days

Then 2x men complete $\frac{1}{2}$ work in $6 \times \frac{1}{2} = 3$ days

Answers:

1. (a)	2. (b)	3. (c)	
4. (a)	5. (c)	6. (d)	
7. (a)	8. (c)	9. (c)	
10. (d)			