

Quiz Date: 15th August 2020

Q1. A alone can complete a piece of work in 4 days working 9 hours a day while B alone can complete the same piece of work in 9 days working 5 hours a day. If they work on alternate days (starting with A), then how much time they will take to complete the same work working 5 hours a day?

- (a) 4 days
- (b) 8 days
- (c) 9 days
- (d) 2 days
- (e) 6 days

Q2. Two identical walls of same height can be built in 8hr and 10hr by A and B respectively. If both starts building the wall at the same time, find after how much time ratio of the unbuild part of walls built by A and B become 15:16?

- (a) 4hr
- (b) 2hr
- (c) 3hr
- (d) 5hr
- (e) 6hr

Q3. A and B together can complete a work in 45 days while B and C together can complete the same work in 60 days, if B is 50% more efficient than C, find ratio of efficiency of A to C ?

- (a) 11 : 7
- (b) 11 : 3
- (c) 11 : 2
- (d) 11 : 5
- (e) 11 : 6

Q4. Deepak and Shivam together can complete a work in 6 days. If Deepak starts the work and works for 7 days, then remaining work was completed by Shivam in 4.5 days. Find efficiency of Deepak is what percent of that of Shivam's?

- (a) 50%
- (b) 100%
- (c) 150%
- (d) 160%
- (e) 125%

Q5. Time taken by three persons A, B and C to complete a work alone are in the ratio of 3 : 4 : 5. If C works with 25% more efficient than his usual efficiency with B, then they complete the work in 8 days. Find time taken by A to complete the work alone.

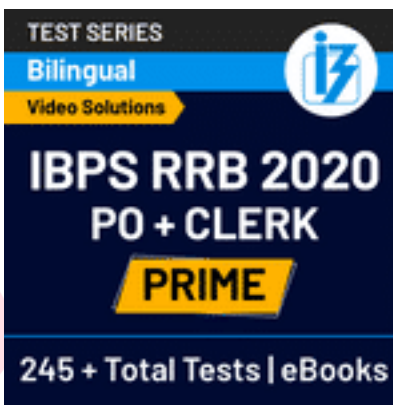
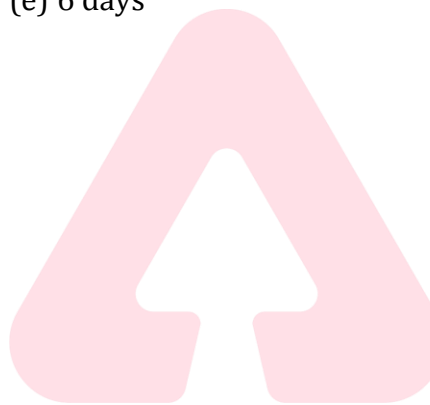
- (a) 15 days
- (b) 20 days
- (c) 18 days
- (d) 12 days
- (e) 10 days

Q6. 4 men or 6 boys can complete a piece of work in 12 days. If 6 men and 3 boys start working together, then find in how many days they complete the same work.

- (a) 4 days
- (b) 3 days
- (c) 6 days
- (d) 8 days
- (e) 9 days

Q7. A alone can complete a piece of work in 4 days working 9 hours a day while B alone can complete the same piece of work in 9 days working 5 hours a day. If they work on alternate days (starting with A), then how much time they will take to complete the same work working 5 hours a day?

- (a) 4 days
- (b) 8 days
- (c) 9 days
- (d) 2 days
- (e) 6 days



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Q8. Deepak and Hemant can complete a work in 5 days and 6 days respectively, both work for $2\frac{1}{11}$ days together and the remaining work done by Hemant alone, find time taken by Hemant to complete the remaining work?

- (a) 2.4 days
- (b) 1.4 days
- (c) 2.6 days
- (d) 1.5 days
- (e) 1.6 days

Q9. Three pipes A, B and C can fill a tank from empty to full in 30 minutes, 20 minutes and 10 minutes respectively. When the tank is empty, all the three pipes are opened. A, B and C discharge chemical solutions P, Q and R respectively. What is the proportion of solution R in the liquid in the tank after 3 minutes?

- (a) $\frac{5}{11}$
- (b) $\frac{6}{11}$

- (c) $\frac{7}{11}$
- (d) $\frac{8}{11}$
- (e) $\frac{9}{11}$

Q10. Three taps A, B and C are connected to a water tank and the rate of flow of water from them is 42 litres/hr, 56 litre/hr and 48 litres/hr. Tap A and B fill the tank and tap C empties it. If the tank gets completely filled in 16 hours, what is the capacity of the tank?

- (a) 146 litres
- (b) 960 litres
- (c) 800 litres
- (d) 1200 litres
- (e) 500 litres

Q11. Three pipes A, B and C can fill a tank separately in 12 hours, 15 hours and 30 hours respectively. Find out the time taken by all pipes to fill the tank when all pipes are opened together?

- (a) $5\frac{6}{11}$ hours
- (b) $5\frac{5}{11}$ hours
- (c) $6\frac{5}{11}$ hours
- (d) $5\frac{10}{11}$ hours
- (e) $7\frac{5}{11}$ hours

Q12. Two pipes A and B can fill a tank in 15 hours and 20 hours respectively. how much time taken by both pipes to fill the tank when they are opened alternately for 1 hour, starting from A?

- (a) 14 hours
- (b) 16 hours
- (c) 15 hours
- (d) 17 hours
- (e) 18 hours

Q13. Inlet pipe A is 5 times more efficient than Inlet pipe B to fill the tank. If Inlet pipe A can fill the tank in 21 min. then how much time is taken by both pipes to fill the tank when both pipes are opened together?

- (a) 15 min
- (b) 14 min
- (c) 16 min
- (d) 17 min
- (e) 18 min

Q14. Two pipes A and B can fill a tank separately in 10 min and 15 min respectively. There is also an outlet pipe C. if the all the three pipes are opened together. The tank is filled in 12 min. find out the time taken by pipe C to empty the fully filled tank?

- (a) 12 min
- (b) 13 min
- (c) 15 min
- (d) 11 min
- (e) 18 min

Q15. Two pipes A and B together can fill the tank in 20 min, pipes B and C together can fill the same tank in 30 min and C and A together can fill the same tank in 40 min. Then find out the time taken by pipe A alone to fill the tank?

- (a) 46 min
- (b) 42 min
- (c) 48 min
- (d) 47 min
- (e) 45 min

Solutions

S1. Ans (b)

Sol. Time taken by A to complete the work alone = $4 \times 9 = 36$ hours

Time taken by B to complete the work alone = $9 \times 5 = 45$ hours

Let total work be 180 units (LCM)

So, efficiency of A and B are 5 units/hour and 4 units/hour respectively.

ATQ

Two day work of A and B working 5 hours a day = $(5 + 4) \times 5 = 45$ units

So, total time taken by them to complete the work = $\frac{180}{45} \times 2 = 8$ days

S2. Ans(b)

Sol. let height of both the wall is = 40m (l.c.m. of 8 and 10)

So, efficiency of A and B = 5m/hr and 4m/hr respectively

Let after t time ratio becomes 15:16

ATQ

$$\frac{40-5t}{40-4t} = \frac{15}{16}$$

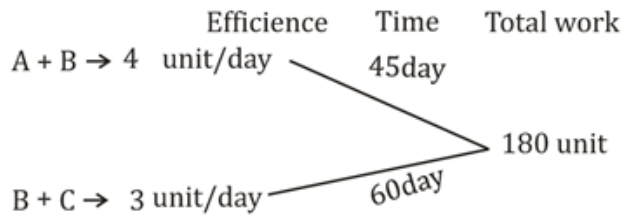
$$640 - 80t = 600 - 60t$$

$$20t = 40$$

$$t = 2hr$$

S3. Ans.(e)

Sol.



Let Efficiency of C = $2x$ units/day

Then, Efficiency of B = $3x$ unit/day

ATQ,

$$3x + 2x = 3$$

$$x = \frac{3}{5}$$

$$\text{So, } 2x = \frac{6}{5}$$

$$\text{and } 3x = \frac{9}{5}$$

$$\text{Efficiency of A} = 4 - \frac{9}{5} = \frac{11}{5}$$

$$\text{Required Ratio} = \frac{11}{5} : \frac{6}{5} = 11 : 6$$



S4. Ans.(c)

Sol. Let efficiency of Deepak and Shivam are 'D' and 'S' respectively.

ATQ,

$$6(D + S) = 7D + 4.5 S$$

$$6D + 6S = 7D + 4.5 S$$

$$D = 1.5 S$$

$$\frac{D}{S} = \frac{3}{2}$$

$$\text{Required percentage} = \frac{3}{2} \times 100$$

$$= 150\%$$

S5. Ans (d)

Sol. Let time taken by A, B and C to complete the work alone be $3x$, $4x$ and $5x$ days.

ATQ

$$8 \left[\frac{1}{5x} \times \frac{5}{4} + \frac{1}{4x} \right] = 1$$

$$\frac{1}{4x} + \frac{1}{4x} = \frac{1}{8}$$

$$\frac{1}{2x} = \frac{1}{8}$$

$$x = 4$$

So, required time = $3x = 12$ days

S6. Ans (c)

Sol. Let efficiency of one man and one boy be m and b respectively.

$$4 \text{ men} = 6 \text{ boy}$$

Let time taken by 6 men and 3 boys to complete the work together be x days.

ATQ

$$(6m + 3b) \times x = 4m \times 12$$

$$(6m + 2m) \times x = 48m$$

$$x = 6 \text{ days}$$

S7. Ans (b)

Sol. Time taken by A to complete the work alone = $4 \times 9 = 36$ hours

Time taken by B to complete the work alone = $9 \times 5 = 45$ hours

Let total work be 180 units (LCM)

So, efficiency of A and B are 5 units/hour and 4 units/hour respectively.

ATQ

Two day work of A and B working 5 hours a day = $(5 + 4) \times 5 = 45$ units

So, total time taken by them to complete the work = $\frac{180}{45} \times 2 = 8$ days

S8. Ans(b)

Sol. let total work = 30 units (LCM)

Efficiency of Hemant and Deepak = $\frac{30}{6}$ and $\frac{30}{5}$
 = 5 units/day and 6 units/day respectively

$$\text{Required time} = \frac{(30 - (6+5) \times \frac{23}{11})}{5} = \frac{7}{5}$$

$$= 1.4 \text{ days}$$

S9. Ans.(b)

Sol. A can fill the tank = 30 minutes

B can fill the tank = 20 minutes

C can fill the tank = 10 minutes

LCM of (30, 20, 10) = 60

	A	B	C
Efficiency =	$\frac{60}{30}$	$\frac{60}{20}$	$\frac{60}{10}$
	2	3	6

Given, A, B and C are discharging chemical's P, Q and R respectively.

In 3 minutes A discharge P = $3 \times 2 = 6$

3 minutes B discharge Q = $3 \times 3 = 9$

3 minutes C discharge R = $6 \times 3 = 18$

Total Quantity of chemical in 3 minutes = $18 + 9 + 6 = 33$

Ratio of R after 3 minutes = $\frac{18}{33} = \frac{6}{11}$

S10. Ans.(c)

Sol.

Total water filled in 1 hour = $42 + 56 - 48 = 50$ litres

Water filled in 16 hours = $16 \times 50 = 800$ litres

Hence the capacity of tank = 800 litres

S11. Ans (b)

Sol.

Let capacity of tank = lcm of (12,15,30)
= 60 unit

So,

Efficiency of pipe A = $\frac{60}{12} = 5$ unit/hour

Efficiency of pipe B = $\frac{60}{15} = 4$ unit/hour

Efficiency of pipe C = $\frac{60}{30} = 2$ unit/hour

Time taken by all pipes together to fill the tank = $\frac{60}{5+4+2} = \frac{60}{11}$
= $5\frac{5}{11}$ hours

S12. Ans (d)

Sol.

Let capacity of tank = lcm of (15,20)
= 60 unit

So,

Efficiency of pipe A = $\frac{60}{15} = 4$ unit/hour

Efficiency of pipe B = $\frac{60}{20} = 3$ unit/hour

Starting with pipe A

In first 2 hours, tank filled = $4+3 = 7$ unit

In $2 \times 8 = 16$ hours, tank filled $8 \times 7 = 56$ unit

Remaining tank to be filled by A, $\frac{60-56}{4} = 1$ hour

Total time taken = $16 + 1 = 17$ hours

S13. Ans (e)

Sol. A.T.Q

Let the Efficiency of A and B are $6x$ and x respectively.

Let both pipes together can fill the tank in t min

ATQ,

$6x \times 21 = (6x + x)t$

$t=18$ min

S14. Ans (a)

Sol.

Let capacity of tank = lcm of (10,15,12) = 60 unit

Efficiency of pipe A = $\frac{60}{10} = 6$ unit/hour

Efficiency of pipe B = $\frac{60}{15} = 4$ unit/hour

Efficiency of pipe A, B and C together = $\frac{60}{12} = 5$ unit/hour

Then efficiency of pipe C = $5 - (6+4) = -5$ (-ve sign shows outlet pipe) unit/hour

So,

Time taken by pipe C = $\frac{60}{5} = 12$ min

S15. Ans (c)

Sol.

Let capacity of tank = lcm of (20,30,40) = 120 unit

Efficiency of pipe A and B together = $\frac{120}{20} = 6$ unit/hour

Efficiency of pipe B and C together = $\frac{120}{30} = 4$ unit/hour

Efficiency of pipe C and A together = $\frac{120}{40} = 3$ unit/hour

So, efficiency of pipe A, B and C together = $\frac{6+4+3}{2} = 6.5$

Efficiency of pipe A = $6.5 - 4 = 2.5$ unit/hour

Time taken by pipe A = $\frac{120}{2.5} = 48$ min

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