

Quiz Date: 5th June 2020

Q1. Bharat and Priyanka can do a piece of work in 45 and 40 days respectively. They began the work together, but Bharat leaves after some days and Priyanka finished the remaining work in 23 days. After how many days did Bharat leave?

- (a) 7 days
- (b) 8 days
- (c) 9 days
- (d) 11 days
- (e) 13 days

Q2. 'A' starts working on a job and continues for 12 days completing 40% of the work. To complete the work, he employs C. Together they work for another 12 days and completed it. A is how much percent more efficient than C.

- (a) 75 %
- (b) 150 %
- (c) 100 %
- (d) 50 %
- (e) Both are equally efficient

Q3. Two pipes P and Q can fill tank A in 28 minutes and 56 minutes respectively and empty pipe M can empty the tank in 42 minutes. Tank A has the capacity of 168 liters. If all three pipes opened in tank B for $(x - 24)$ minutes together they filled 90 liter of the tank which is 25% of the quantity of tank B. Find in x minutes what portion of tank B filled, if all pipe P and Q and M opened alternatively in each minute starting with P, followed by Q and M respectively?

- (a) $\frac{5}{36}$
- (b) $\frac{7}{36}$
- (c) $\frac{9}{38}$
- (d) $\frac{7}{38}$
- (e) $\frac{7}{39}$

Q4. A can do a task in 18 days, B can do the same task in 24 days and C can destroy the whole work in 36 days. If A & B work for first x days together after that C also joined them, remaining work is completed in $(x + 4\frac{4}{5})$ days. Find how many days all three worked together?

- (a) $6\frac{4}{5}$ days
- (b) $5\frac{4}{5}$ days
- (c) $4\frac{4}{5}$ days
- (d) $7\frac{4}{5}$ days

(e) $8\frac{4}{5}$ days

Q5. Three pipes A, B and C can fill together a tank in 6 hours. After working together for 2 hours, C is closed, and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the complete tank is:

- (a) 10 hours
- (b) 12 hours
- (c) 14 hours
- (d) 16 hours
- (e) 18 hours

Q6. Two pipes P and Q can fill a cistern in 12 and 15 minutes respectively. If both are opened together and after 3 minutes pipe P is closed, find the total time in which cistern will be filled?

- (a) $11\frac{1}{4}$ minutes
- (b) $8\frac{3}{4}$ minutes
- (c) $13\frac{2}{3}$ minutes
- (d) $8\frac{1}{2}$ minutes
- (e) 15 minutes



Q7. Manoj can do $\frac{1}{3}$ rd of a work in 8 days while Vijay can do $\frac{2}{3}$ rd of the same work in 5 days. Manoj and Vijay started the work together and on every second day, they are assisted by Anjay whose efficiency is $\frac{3}{4}$ th of Vijay. Find the time taken by all of them to complete the work.

- (a) $4\frac{4}{7}$ days
- (b) $5\frac{1}{2}$ days
- (c) $5\frac{1}{7}$ days
- (d) $4\frac{1}{2}$ days
- (e) 5 days

Q8. A and B working together can do a work in 9 days while B and C working together can do the same work in 12 days. If A works for 4 days and B works for 6 days, then the remaining work is completed by C in 9 days. Find in how many days C will complete the whole work working individually.

- (a) 16 days
- (b) 12 days
- (c) 10 days
- (d) 20 days
- (e) 18 days

Q9. Tap A can fill a water tank in 25 minutes, tap B can fill the same tank in 40 minutes and tap C can empty the tank in 30 minutes. If all the three taps are opened together, in how many minutes will the tank be completely filled up or emptied?

- (a) $3\frac{2}{13}$
- (b) $15\frac{5}{13}$
- (c) $8\frac{2}{13}$
- (d) $31\frac{11}{19}$
- (e) None of these

Q10. There are three Taps A, B and C in a tank. They can fill the tank in 10 hrs, 20 hrs and 25 hrs respectively. At first, all of them are opened simultaneously. Then after 2 hours, tap C is closed and A and B are kept running. After the 4th hour, tap B is also closed. The remaining work is done by Tap A alone. Find the percentage of the work done by Tap A alone.

- (a) 32%
- (b) 52%
- (c) 75%
- (d) 72%
- (e) 84%

Directions (11-12): Given below are the two series in which first series is correct and follows some pattern. Based on the pattern followed in first series find the value of E in each question.

Q11. 3756, 3763, 3749, 3777, 3721, 3833
(3760), (B), (C), (D), (E)

- (a) 3725
- (b) 3526
- (c) 3628
- (d) 3927
- (e) 4272

Q12. 1256, 1256, 1260, 1278, 1326, 1426
(1258), (B), (C), (D), (E)

- (a) 1762
- (b) 1544
- (c) 1328
- (d) 1620
- (e) 1840

Directions (13 – 14) : What will come in the place of (A), (B) & (C) in second **(II)** number series according to pattern of first **(I)** number series:

Q13. **(I)** 291, 363, 443, 531, 627, 731

(II) (A), 102, (B), 198, (C) 326

- (a) 66, 171, 324
 (b) 51, 146, 220
 (c) 66, 146, 291
 (d) 66, 146, 258
 (e) None of these

Q14. **(I)** 35, 90, 175, 320, 585, 1090

(II) 105, (A), (B), 390, 655, (C)

- (a) 160, 235, 1160
 (b) 160, 245, 1160
 (c) 160, 245, 1150
 (d) 160, 245, 1120
 (e) 160, 235, 1140

Q15. **Series I** - 2.4, 4, 7.2, 12, 18.4, 26.4, 36

Series II - (A), 20, 23.2, 28, (B), 42.4, (C)

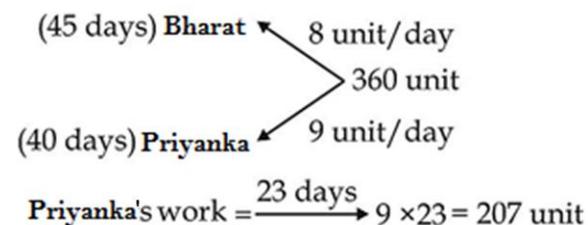
- (a) 18.4, 34.4, 54
 (b) 18.4, 36, 52
 (c) 18.4, 34.4, 52
 (d) 18.4, 34.4, 56
 (e) 19.4, 34.4, 52



Solutions

S1. Ans.(c)

Sol.



Remaining work = $360 - 207 = 153$ units

Bharat + Priyanka = 17 unit/day

\therefore Required time = $\frac{153}{17} = 9$ days

S2. Ans.(c)

Sol. In 12 days A done 40% of work

\therefore In another 12 days A'll do another 40% of the work

So, work done by A is 80% in 24 days

which C will do remaining 20% of the work in 12 days

Hence A is 100% more efficient than C.

S3. Ans.(b)

Sol.

ATQ

For tank A —

<u>pipes</u>	<u>time</u>	<u>quantity</u>	<u>efficiency</u>
P	— 28	} 168	6 unit/minutes
Q	— 56		3 unit/minutes
M	— 42		(-4) unit/minutes

ATQ

For tank B —

$$6(x - 24) + 3(x - 24) - 4(x - 24) = 90$$

$$6x - 144 + 3x - 72 - 4x + 96 = 90$$

$$5x = (90 + 144 + 72 - 96)$$

$$x = \frac{210}{5} = 42 \text{ minutes}$$

Total quantity of tank B = $90 \times 4 = 360$ liter

Alternatively (P + Q - M) for 42 minutes, means each pipe for 14 minutes—

All three in 14 minutes

$$(P + Q - M) = 14 \times 6 + 14 \times 3 - 14 \times 4$$

$$= 70 \text{ liter}$$

$$\text{Filled portion} = \frac{70}{360} = \frac{7}{36}$$

S4. Ans.(e)

Sol.

	<u>Days</u>	<u>Total work</u>	<u>efficiency</u>
A	— 18	} 72	4 unit/daily
B	— 24		3 unit/daily
C	— 36		(-2) unit/daily

ATQ—

$$(A + B)x + (A + B - C) \left(\frac{5x+24}{5} \right) = 72$$

$$7x + 5 \left(\frac{5x+24}{5} \right) = 72$$

$$12x = 48$$

$$x = 4$$

(A + B + C) work for

$$= 4 + 4\frac{4}{5}$$

$$= 8\frac{4}{5} \text{ days}$$

S5. Ans.(c)

Sol.

A + B + C can fill a tank in 6 hours

They work for 2 hours together

So, $\frac{2}{6} = \frac{1}{3}$ work has done

$$\text{Remaining work} = 1 - \frac{1}{3} = \frac{2}{3}$$

$\frac{2}{3}$ of work is done by A + B = 7 hours

$$A + B \text{ can fill the tank in} = 7 \times \frac{3}{2} = \frac{21}{2}$$

$$\text{LCM of } \left(6, \frac{21}{2}\right) = 126$$

$$\text{Efficiency of } A + B + C = \frac{126}{6} = 21$$

$$\text{Efficiency of } A + B = \frac{126}{\frac{21}{2}} = 12$$

$$\text{So, efficiency of } C = 21 - 12 = 9$$

$$\text{Time taken to fill the tank by } C = \frac{126}{9} = 14 \text{ hours}$$

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S6. Ans.(a)

Sol.

P can fill = 12 minutes

Q can fill = 15 minutes

$$\text{LCM of } (12, 15) = 60$$

$$\text{Efficiency of } P = \frac{60}{12} = 5$$

$$\text{Efficiency of } Q = \frac{60}{15} = 4$$

ATQ,

Let x be the required time

$$9 \times 3 + x \times 4 = 60$$

$$x = \frac{33}{4} = 8\frac{1}{4} \text{ minutes}$$

$$\text{Total time taken} = 3 + 8\frac{1}{4} = 11\frac{1}{4} \text{ minutes}$$

S7. Ans.(a)

Sol.

Manoj does $\frac{1}{3}$ rd of the work in 8 days.

$$\therefore \text{he will do the whole work in } 8 \times \frac{3}{1} = 24 \text{ days}$$

Similarly, Vijay will do the whole work in $\frac{5 \times 3}{2} = \frac{15}{2}$ days.

As, efficiency of Anjay is $\frac{3}{4}$ th of Vijay.

So, time taken by Anjay to do the whole work

$$= \frac{15}{2} \times \frac{4}{3} = 10 \text{ days}$$

	<u>Time</u>		
Manoj —	24 days	5	<u>LCM</u> 120
Vijay —	$\frac{15}{2}$ days	16	
Anjay —	10 days	12	

Now,

1 st day	2 nd day
Manoj + Vijay	Manoj + Vijay + Anjay
5 + 16	5 + 16 + 12
= 21	= 33

54 works is done by All of them in 2 days.

$$\therefore 108 \text{ works will be done in } \frac{2}{54} \times 108 = 4 \text{ days.}$$

So, Required time = $4 + \frac{12}{21}$ [Remaining work = 12]

$$= 4 + \frac{4}{7} = 4\frac{4}{7} \text{ days.}$$

S8. Ans.(e)

Sol.

	<u>Time</u>	<u>Efficiency</u>	
A + B —	9 days	4	<u>work</u> 36
B + C —	12 days	3	

Let the efficiency of C be x.

Then,

$$4(A + B) + 2(B + C) + 7 \times C = \text{total work}$$

$$= 36$$

$$\Rightarrow 16 + 6 + 7 \times x = 36$$

$$\Rightarrow x = 2$$

Time taken by C = $\frac{36}{2} = 18$ days.

S9. Ans.(d)

Sol.

$$\begin{array}{r} 24 - A - 25 \\ 15 - B - 40 \\ -20 - C - 30 \end{array} \rightarrow 600$$

$$19 - A + B + C$$

Tank will be full in = $\frac{600}{19} = 31\frac{11}{19}$ minutes

S10. Ans.(d)

Sol.

Let the tap A is kept on for x hours

According to question

$$\frac{x}{10} + \frac{4}{20} + \frac{2}{25} = 1$$

$$\Rightarrow \frac{10x + 20 + 8}{100} = 1$$

$$x = \frac{72}{10} = 7.2 \text{ hrs}$$

As, In 10 hours, A can do 100% work

Hence, in 7.2 hours, A 'll do 72% work.

S11. Ans.(a)

Sol. **The given pattern is -**

$$\begin{array}{cccccc} 3756 & 3763 & 3749 & 3777 & 3721 & 3833 \\ \hline & +7 & -14 & +28 & -56 & +112 \end{array}$$

So, (E) = $3760 + 7 - 14 + 28 - 56 = 3725$

S12. Ans.(c)

Sol. **The given pattern is -**

$$1256, 1256, 1260, 1278, 1326, 1426$$

$$\begin{array}{cccccc} \hline & & & & & \\ \hline 1^3 - 1^2 & 2^3 - 2^2 & 3^3 - 3^2 & 4^3 - 4^2 & 5^3 - 5^2 & \end{array}$$

So, (E) = $1258 + 0 + 4 + 18 + 48 = 1328$

S13. Ans(d)

Sol.

Pattern of series -

$$291 = (17^2 + 2)$$

$$363 = (19^2 + 2)$$

$$443 = (21^2 + 2)$$

$$531 = (23^2 + 2)$$

$$627 = (25^2 + 2)$$

$$(II) \quad 102 = (10^2 + 2)$$

$$\text{So, (A) } = (8^2 + 2) = 66$$

$$(B) = (12^2 + 2) = 146$$

$$198 = (14^2 + 2)$$

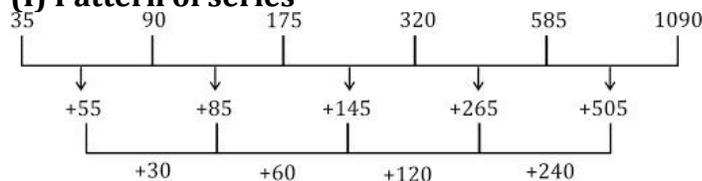
$$(C) = (16^2 + 2) = 258$$

$$324 = (18^2 + 2)$$

S14. Ans(b)

Sol.

(I) Pattern of series -



$$(II) \quad (A) = 105 + 55 = 160$$

$$(B) = 160 + 85 = 245$$

$$390 = 245 + 145$$

$$655 = 390 + 265$$

$$(C) = 655 + 505 = 1160$$

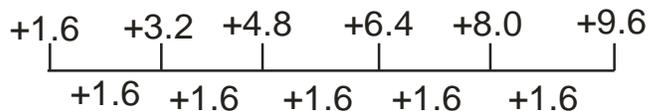
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S15. Ans(c)

Sol.

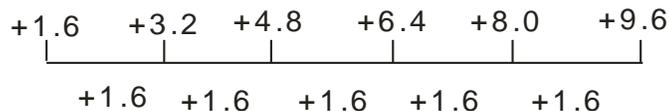
Pattern of series I -

2.4 , 4 , 7.2 , 12 , 18.4 , 26.4 , 36



Same series II -

(A=18.4), 20 , 23.2 , 28 , (B=34.4), 42.4 (C=52)



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