



Time and Work questions for SSC- CGL set-3 PDF

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Instructions

For the following questions answer them individually

Question 1

A and C together can complete a work in 120 days, C and E together can complete the same work in 80 days and A and E together can complete the same work in 160 days. In how many days A, C and E together can complete the same work?

- A $\frac{120}{13}$ days
- B $\frac{480}{13}$ days
- C $\frac{240}{13}$ days
- D $\frac{960}{13}$ days

Answer: D

Explanation:

Let the total work be 480 units. (LCM of 120, 80 and 160)

Efficiency of A+C = $480/120 = 4$ units/day

Efficiency of C+E = $480/80 = 6$ units/day

Efficiency of A+E = $480/160 = 3$ units/day

Efficiency of 2(A+C+E) = 13 units/day

Efficiency of A+C+E = $\frac{13}{2}$ units/day

Therefore, Total work will be completed in $\frac{480}{\frac{13}{2}} = \frac{960}{13}$ days

Question 2

12 persons can complete half of a work in 9 days. How many persons can complete the same work (whole) in 6 days?

- A 36
- B 45
- C 48
- D 42

Answer: A

Explanation:

$$M_1 \times D_1 = M_2 \times D_2$$

We know that $W_1 = W_2$ where M = No. of men, D = No. of days and W = Work

$$\frac{12 \times 9}{2} = \frac{M_2 \times 6}{1}$$

$$\Rightarrow M_2 = \frac{12 \times 9 \times 2}{6} = 36$$

Therefore, 36 men are required to complete whole work in 6 days.

Question 3

A can complete a task in 8 days and B in 16 days respectively. If they work together for 3 days, then the remaining part of the work left is:

- A $\frac{5}{16}$
- B $\frac{9}{16}$
- C $\frac{7}{16}$
- D $\frac{11}{16}$

Answer: C

Explanation:

Let the total work be 16 units (LCM of 8 and 16)

Efficiency of A = $\frac{16}{8} = 2$ units/day

Efficiency of B = $\frac{16}{16} = 1$ unit/day

Total work done in 1 day = 3 units

Then, In 3 days, 9 units of work will be completed.

$$16 - 9 = 7$$

Remaining part of work = $\frac{7}{16} = \frac{7}{16}$

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Question 4

P works twice as fast as Q. If Q can complete a task in 36 days independently, the number of days in which P and Q can together complete the task in:

- A 12 days
- B 9 days
- C 16 days
- D 18 days

Answer: A

Explanation:

Given, Efficiencies of P and Q are in the ratio 2 : 1.

Q can do the work independently in 36 days.

Let the total work be 36 units.

Efficiency of Q = 1 unit per day

Efficiency of P = 2 units per day.

Efficiency of P and Q together = 3 units per day

Therefore, 36 units of work will be completed in $\frac{36}{3} = 12$ days.

Question 5

30 persons can do a piece of work in 24 days. How many more people are required to complete the work in 20 days?

- A 8
- B 5
- C 4

D 6

Answer: D

Explanation:

Total work = 30×24 men days

let the number of days be x

$$20 \times x = 30 \times 24$$

$$x = 36 \text{ days}$$

So $36 - 30 = 6$ more people are required

Question 6

A and B can do piece of work in 4 days and C and D in 3 days. In how many days will A, B, C and do it together?

A $\frac{12}{7}$ days

B $\frac{7}{12}$ days

C $\frac{2}{3}$ days

D $\frac{3}{2}$ days

Answer: A

Explanation:

Time taken for both 'A' and 'B' to do the work is 4 days

$$\text{i.e. } (1/a) + (1/b) = 1/4$$

Time taken for both 'C' and 'D' to do the same work is 3 days.

$$(1/c) + (1/d) = 1/3$$

For all of them to complete the work by working together let it take ' x ' days

$$(1/x) = (1/a) + (1/b) + (1/c) + (1/d)$$

$$(1/x) = (1/4) + (1/3)$$

$$(1/x) = (3+4)/(12)$$

$$(1/x) = 7/12$$

$$x = 12/7 \text{ days}$$

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Question 7

Had been one man less, then the number of days required to do a piece of work would have been one more. If the number of Man. Days required to complete the work is 56, how many workers were there?

A 14

B 9

C 6

D 8

Answer: D

Explanation:

Let the number of men be ' x ' and number of days be ' y '

Total number of men days = xy

$$\text{also } xy = (x-1)(y+1)$$

$$xy = xy - 1 + x - y$$

$$x - y = 1$$

$xy=56$
 $x-(56/x)=1$
 $x^2 - x - 56=0$
 $x^2 - 8x + 7x - 56=0$
 $x(x-8)+7(x-8)=0$
 $(x+7)(x-8)=0$
 $x=8$ and $y=7$
Therefore 8 men are needed

Question 8

Working together A, B and C can complete a piece of work in 24 days. After working together for 4 days. C left the work. A and B completed the remaining work in 30 days. The number of days taken by C alone to complete the same work is:

- A 60
- B 54
- C 72
- D 90

Answer: C

Explanation:

Let the total work be 48 units
Number of units of work they together do on each day= $48/24 = 2$ units
In 4 days they together do $4*2=8$ units of work
So $48-8=40$ units is left
This is done by A and B in 30 days and so their combined efficiency= $40/30 = 4/3$
In each day C can do $2-(4/3)=2/3$ units
So 48 units is done in $48*3/2=72$ days

Question 9

A can do $\frac{3}{5}$ th of a work in 12 days, B can do $\frac{1}{3}$ rd of that work in 15 days. They worked together for 12 days and then A left the work, B alone will complete the remaining work in?

- A 9 days
- B 6 days
- C 4 days
- D 5 days

Answer: B

Explanation:

Given A does $(3/5)$ th of work in 12 days
so A takes $12*5/3 = 20$ days for complete work
similarly B takes 15 days for $(1/3)$ rd work and so for complete work it takes 45 days
LCM of 20 and 45 is 180 units
Each day 'A' does $180/20 = 9$ units of work
Each day 'B' does $180/45 = 4$ units of work
So each day both can complete 13 units of work
In 12 days they complete $12*13=156$ units of work
So $180-156=24$ units
B can complete 24 units in $24/4 = 6$ days

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Question 10

P, Q and R can complete a work in 30 days, 15 days and 20 days respectively. P works on first day, then Q works on second day and then R works on third day and so on. In how many days the work will be completed?

- A 20 days
- B 21 days
- C 22 days
- D 19 days

Answer: A

Explanation:

Let the total work be 60 units (LCM of 30,15 and 20)

Efficiency of P = $60/30 = 2$ units per day

Efficiency of Q = $60/15 = 4$ units per day

Efficiency of R = $60/20 = 3$ units per day

Then, 9 units of work will be completed in 3 days.

=> 54 units of work will be completed in 18 days.

Next 2 units of work will be completed by P in 1 day.

Remaining 4 units of work will be completed by Q in 1 day.

Therefore, Time taken to complete 60 units of work = $18+1+1 = 20$ days.

Question 11

M can complete a work in 14 days less than the time taken by L. If both M and L together can complete the same work in 24 days, then in how many days L alone can complete the same work?

- A 35 days
- B 56 days
- C 21 days
- D 42 days

Answer: B

Explanation:

Let the number of days taken by L to complete the work be L days

Then, 1 day work of L = $\frac{1}{L}$

Number of days taken by M to complete the work = L-14 days

Then, 1 day work of M = $\frac{1}{L-14}$

Given, $\frac{1}{L} + \frac{1}{L-14} = \frac{1}{24}$

=> $L^2 - 14L = 24$

=> $L^2 - 62L + 336 = 0$

$$\Rightarrow L^2 - 6L - 56L + 336 = 0$$

$$\Rightarrow L(L - 6) - 56(L - 6) = 0$$

$$\Rightarrow (L - 56)(L - 6) = 0$$

$$\Rightarrow L = 56 \text{ or } L = 6$$

Since, M can do the work 14 days less than L, L cannot be 6.

Hence, L can do the work in 56 days.

Question 12

Anil, Deepak and Dinesh together can complete a work in 35 days. Anil and Dinesh together can complete the same work in 60 days. In how many days Deepak alone can complete the same work?

A 105 days

B 84 days

C 96 days

D 110 days

Answer: B

Explanation:

Let the total work be 420 units (LCM of 35 and 60).

Efficiency of Anil, Dinesh and Deepak together = $420/35 = 12$ units per day

Efficiency of Anil and Dinesh together = $420/60 = 7$ units per day

Then, Efficiency of Deepak = $12 - 7 = 5$ units per day

Therefore, Deepak can do 420 units of work in $420/5 = 84$ days.

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Question 13

Ravi, Manish and Naveen alone can complete a work in 30 days, 15 days and 10 days respectively. They start the work together but Ravi leaves the work after 2 days of the starting of the work and Manish leaves the work after 3 days more. In how many days Naveen will complete the remaining work?

A 3 days

B 4 days

C 1 day

D 2 days

Answer: C

Explanation:

Let the total work be 30 units (LCM of 30, 15 and 10)

Efficiency of Ravi = $30/30 = 1$ unit per day

Efficiency of Manish = $30/15 = 2$ units per day

Efficiency of Naveen = $30/10 = 3$ units per day

They worked together for 2 days.

Work done in 2 days = $6 \times 2 = 12$ units

Remaining work = 18 units

Manish and Naveen worked for 3 days.

Work done in 3 days = $5 \times 3 = 15$ units

Remaining work = 3 units.

3 units will be completed by Naveen in 1 day.

Question 14

X is twice as good as workman as Y. Together, they finish the work in 18 days. In how many days can it be done by each separately?

- A** X = 21 days, Y = 42 days
- B** X = 9 days, Y = 18 days
- C** X = 19 days, Y = 38 days
- D** X = 27 days, Y = 54 days

Answer: D

Explanation:

Let the efficiency of Y = 1 unit per day.
 Then, The efficiency of X = 2 units per day.
 Total efficiency of A and Y together = 3 units per day.
 Then, in 18 days, X and Y can do $18 \times 3 = 54$ units of work.
 Hence, Total work = 54 units.

X can do the work individually in $\frac{54}{2} = 27$ days

Y can do the work individually in $\frac{54}{1} = 54$ days.

Question 15

3 men, 4 women and 6 children can complete a work in 7 days. A woman does double the work a man does and a child does half the work a man does. How many women alone can complete this work in 7 days?

- A** 6
- B** 8
- C** 9
- D** 7

Answer: D

Explanation:

Efficiency of 2 men = Efficiency of 1 women

1

1 man = 2 woman

3

3 men = 2 women

1

Efficiency of 2 children = Efficiency of 1 men = Efficiency of 2 women

1

Efficiency of 1 child = Efficiency of 4 women

3

Efficiency of 6 children = Efficiency of 2 women

3

3

Therefore, Total efficiency of 3 men, 4 women and 6 children = $2 + 4 + 2 = 3 + 4 = 7$ women

Therefore, 7 women are required to complete the work in 7 days.

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