

Time And Work (LOD 02)

1. 2 men and 3 women finish 25% of the work in 4 days, while 6 men and 14 women can finish the whole work in 5 days, In how many days will 20 women finish it?

- a) 20 b) 25
c) 24 d) 88

2. 10 men and 15 women finish a work in 6 days. One man alone finishes that work in 100 days. In how many days will one woman can finish the work ?

- a) 125 days b) 150 days
c) 90 days d) 225 days

3. A, B and C contract a work for Rs. 550. Together A and B are supposed to do $\frac{7}{11}$ of the work. The share of C should be ?

- a) Rs. $183 \frac{1}{3}$ b) Rs. 200
c) Rs. 300 d) Rs. 400

4. A and B separately can complete a work in 6 days and 3 days respectively. If they work together, then in how many days will they complete the work ?

- a) 4 days b) 3 days
c) 2 days d) 5 days

5. Ram, Dilip and Shekhar can complete a work in 20 days. If Ram and Dilip together can complete the same work in 30 days, then how long will Shekhar take to complete it ?

- a) 60 days b) 62 days
c) 40 days d) 56 days

6. Sunil complete a work in 4 days whereas Dinesh completes the work in 6 days. Ramesh work $1\frac{1}{2}$ times as fast as sunil. How many days it will take for the three together to complete the work ?

- a) $7\frac{1}{12}$ b) $1\frac{5}{12}$
c) $1\frac{5}{7}$ d) None of these

7. Mahesh and Umesh can complete a work in 10 days and 15 days respectively. Umesh starts the work and after 5 days Mahesh also joins him. In all the work would be completed in ?

- a) 7 days b) 9 days
c) 11 days d) None of these

8. A can do a piece of work in 80 days. He works at it For 10 days and then B alone finishes the work in 42 days. The two together could complete the work in ?

- a) 24 days b) 25 days
c) 30 days d) 35 days

9. A can do a certain job in 25 days which B alone can do in 20 days. A started the work and was joined by B after 10 days. The work lasted for ?

- a) $12\frac{1}{2}$ b) $14\frac{2}{9}$
c) 15 days d) $16\frac{2}{3}$

10. 14 men can complete a work in 12 days. 4 days after they started the work, 2 more men joined them. How many days will they take to complete the remaining work ?

- a) 9 days b) 5 days
c) 6 days d) 7 days

11. 12 men can complete a work within 9 days. After 3 days they started the work, 6 men joined them to replace 2 men. How many days will they take to complete the remaining work ?

- a) 2 b) 3
c) 4 d) $4\frac{1}{2}$

12. you can do a piece of work in 8 days, B can do it in 16, While C can do it in 80 days. In how many days they can complete the whole work, working together?

- a) 5 b) 6
c) $8\frac{2}{3}$ d) $20\frac{2}{5}$

13. A can do a piece of work in 10 days ,B can do it in 15 days. Working together they can finish the work in ?

- a) 9 b) 8
c) 10 d) 6

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14. A can do a piece of work in 24 days, while B can do it in 30 days. With the help of C they can finish the whole work in 12 days. How much time is required for C to complete the work, alone?

- a) 100 days b) 120 days
c) 125 days d) 72 days

15. A is thrice efficient as B and C is twice as efficient as B. What is the ratio of number of days taken by A, B and C, when they work individually?

- a) 2 : 6 : 3 b) 2 : 3 : 6
c) 1 : 2 : 3 d) 3 : 1 : 2

16. If A takes $\frac{4}{5}$ days as B takes and working together they require $\frac{20}{3}$ days to complete the whole work. What is the efficiency of B?

- a) $6\frac{2}{3}\%$ b) 16%
c) 5.55% d) $8\frac{1}{3}\%$

17. A is thrice as efficient as B. Working together they complete the work in 3 days. If B take 8 days more than A, What is the number of days taken by A to finish the whole work, alone?

- a) 4 b) 2
c) 12 d) 16

18. A and B can do a piece of work in 12 days B and C in 15 days C and A in 20 days. In how many days can C alone do it?

- a) 60 b) 50 c) 25 d) 24

19. A and B can do a piece of work in 8 days, B and C can do the same work in 12 days and A and C complete it in 8 days. In how many days A, B and C can complete the whole work, working together?

- a) 4 b) 6 c) 12 d) 9

20. A, B and C working in a garment manufacturing company can do the same assignment in 24, 6 and 12 days, respectively. Working together the assignment will be complete in how many days?

- a) $3\frac{3}{7}$ days b) $4\frac{3}{7}$ days
c) 4 days d) 3 days

21. A woman can weave a basket in 6 days. But with the help of her daughter, she can complete the work in 4 days. In what time can the daughter alone do the work?

- a) 12 days b) 16 days
c) 8 days d) 10 days

22. Working together P and Q can do a job in 6 days. Q and R can do the same job in 10 days while P and R can do it in 5 days. How long will it take, if all of them work together to complete the job?

- a) $4\frac{2}{7}$ days b) $4\frac{3}{7}$ days
c) $4\frac{4}{7}$ days d) $4\frac{5}{7}$ days

23. The efficiency of Romil is twice that of Sanjay and he can finish a work in 4 h less than the time taken by Sanjay. If both of them work together they can finish the same work in?

- a) 8 h b) 3 h
c) $8\frac{1}{3}$ h d) $4\frac{1}{3}$ h

24. A man is paid ₹ 5 per h for regular working day and ₹ 8 per h overtime. A regular working day has 8 h and a regular week has 5 working days. If he earns ₹ 920 in 4 weeks, then what is the total number of hours that he worked assuming that he was present on all regular working days?

- a) 200 h b) 180 h
c) 175 h d) 160 h

25. Pipes A and B can fill a tank in 20 h and 30 h, respectively and pipe C can empty the full tank in 40 h. If all the pipes are opened together, how much time will be needed to make the tank full?

- a) $16\frac{1}{7}$ h b) $17\frac{1}{7}$ h
c) $18\frac{1}{7}$ h d) $19\frac{1}{7}$ h

26. A man, a woman and a boy can do a job in 3, 4 and 12 days, respectively. How many boys must assist one man and one woman to complete the job in one and a half days?

- a) 12 b) 6
c) 3 d) 1

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27. A leak in the bottom of a tank can empty the full tank in 6 h. An inlet pipe fills water at the rate of 4 L in a min. When the tank is full, the inlet is opened and due to the leak the tank is empty in 8 h. Find the capacity of the tank ?

- a) 5000 L b) 5670 L
c) 5700 L d) 5760 L

28. A and B can do a piece of work in 12 days, B and C can do it in 15 days and C and A can do the same work in 20 days. Find the number of days in which A alone can do the same job ?

- a) 20 days b) 30 days
c) 45 days d) 60 days

29. Two friend A and B working together completed a work in 26 days. Their skills of doing the work are in the ratio 8 : 5. How many days will B take, if engaged alone ?

- a) $67 \frac{3}{5}$ days b) $42 \frac{1}{4}$ days
c) $56 \frac{3}{5}$ days d) $64 \frac{2}{3}$ days

30. A and B together can complete a piece of work in 35 days while A alone can complete the same work in 60 days. In how many days, B alone will be able to complete the same work ?

- a) 80 days b) 84 days
c) 88 days d) 92 days

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Time And Work (LOD 02 Solutions)**1. Correct Option: A**

$$8M + 12W = 4 \text{ days (whole work)}$$

$$\Rightarrow 32M + 48W = 1 \text{ day (1)}$$

$$\text{Again } 6M + 14W = 5 \text{ days}$$

$$\Rightarrow 30M + 70W = 1 \text{ day (2)}$$

From eq. (1) and (2)

$$32M + 48W = 30M + 70W$$

$$\Rightarrow 2M = 22W$$

$$\Rightarrow 1M = 11W$$

$$\text{Now, } 30M + 70W = 1 \text{ day}$$

$$(30 \times 11 + 70)W = 1 \text{ day}$$

Therefore 400W requires 1 day to complete the whole work.

Thus 20W needs 20 days to complete the whole work.

2. Correct Option: D

\therefore One man alone finishes the work in 100 days.

\Rightarrow 10 men can finish the work in 10 day.

\Rightarrow 15 women can finish work in one days $= 1/6 - 1/10$
 $= 1/15$ work

\Rightarrow 15 women finish the whole work in 15 days

\therefore 1 woman finishes the whole work in $= 15 \times 15 = 225$ days

3. Correct Option: B

$$\text{Work to be done by C} = (1 - 7/11) = 4/11$$

$$\therefore (A + B) : C = 7/11 : 4/11 = 7 : 4$$

$$\therefore \text{C's share} = \text{Rs. } 550 \times (4/11) = \text{Rs. } 200$$

4. Correct Option: C

$$\text{Work completed by A + B in one day} = 1/6 + 1/3 = 1/2$$

\therefore Time taken by A + B to complete the work = 2 days.

5. Correct Option: A

$$\therefore \text{Work of (Ram + Dilip + Shekhar) for 1 day} = 1/20$$

$$\text{and work of (Ram + Dilip) for 1 day} = 1/30$$

$$\therefore \text{Work of Shekhar for 1 day} = 1/20 - 1/30 = 1/60$$

Hence, Shekhar will complete the work in 60 days.

6. Correct Option: D

$$\text{Time taken by Ramesh alone} = (2/3) \times 4 = 8/3 \text{ days}$$

$$\therefore \text{Their 1 day's work} = (1/4 + 1/6 + 3/8) = 19/24$$

So, together they can finish the work in $24 / 19$ days, i.e., $1 \frac{5}{19}$ days

7. Correct Option: B

$$\text{Umesh's 5 day's work} = 5 \times (1/15) = 1/3$$

$$\text{Remaining work} = (1 - 1/3) = 2/3$$

$$(1/10 + 1/15) \text{ work is done by both in 1 day}$$

$$\therefore 2/3 \text{ work is done by both in } 6 \times (2/3) = 4 \text{ days}$$

Hence, the work was completed in $4 + 5 = 9$ days.

8. Correct Option: C

$$\text{A's 10 day's work} = (10 \times 1/80) = 1/8$$

$$\text{Remaining work} = (1 - 1/8) = 7/8$$

$$\therefore 7/8 \text{ work is done by B in 42 days}$$

\Rightarrow Whole work will be done by B in $(42 \times 8/7) = \text{i.e., } 48$ days.

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$$\therefore (A + B)'s \text{ day's work} = (1/80 + 1/48) = 8/240 = 1/30$$

Hence, A and B together can finish it in 30 days.

9. Correct Option: D

$$A's \text{ 10 day's work} = 10 \times (1/25) = 2/5$$

$$\text{Remaining work} = 1 - 2/5 = 3/5$$

$$\text{Work was done by (A + B) in 1 day} = (1/25 + 1/20) = 9/100$$

$$\therefore 3/5 \text{ work was done by (A + B) in } (100/9 \times 3/5) = 20/3 \text{ days}$$

Hence, the work lasted for $(10 + 6 \frac{2}{3}) = 16 \frac{2}{3}$ days.

10. Correct Option: D

$$\therefore \text{In 12 days work done by 14 men} = 1$$

$$\therefore \text{In 4 days work done by 14 men} = 1 \times 4/12 = 1/3$$

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

$$\text{and number of total men} = 14 + 2 = 16$$

If 1 work is done by 14 men in 12 days

$$\therefore 2/3 \text{ work is done by 16 men in } 12 \times (14/16) \times (2/3) = 7 \text{ days}$$

11. Correct Option: D

12 men can complete $1/3$ of the work in 3 days and the remaining $2/3$ of the work in 6 days.

1 man can complete $2/3$ of the work in $(12 \times 6) = 72$ days

$$\therefore (12 - 2 + 6) = 16 \text{ men can complete } 2/3 \text{ of the work in } 72/16 = 4 \frac{1}{2} \text{ days}$$

12. Correct Option: A

$$\text{Efficiency of A} = 12.5\%$$

$$\text{Efficiency of B} = 6.25\%$$

$$\text{Efficiency of C} = 1.25\%$$

$$\text{Efficiency of (A + B + C)} = (12.5 + 6.25 + 1.25) = 20\%$$

$$\text{Required no of days} = 100/20 = 5 \text{ days}$$

13. Correct Option: D

$$\text{Efficiency of A} = 10\%$$

$$\text{Efficiency of B} = 6.66\%$$

$$\therefore \text{Required number of days} = 100/16.66 = 6 \text{ days}$$

14. Correct Option: B

$$\text{Efficiency of A} = 100/24 = 4.16\%$$

$$\text{Efficiency of B} = 100/30 = 3.33\%$$

$$\text{Efficiency of (A + B + C)} = 100/12 = 8.33\%$$

$$\therefore \text{Efficiency of C} = (8.33) - (4.16 + 3.33) = 0.83\%$$

\therefore Number of days required by C to complete the work alone

$$= 100/0.83 = 100/(5/6) = 120 \text{ days}$$

(Note : $5/6 = 0.833$)

15. Correct Option: A

$$A : B : C$$

$$\text{Ratio of efficiency } 3 : 1 : 2$$

$$\text{Ratio of number of days } \{ 1/3 : 1/1 : 1/2 \}$$

$$\text{or } 2 : 6 : 3$$

Hence, (a) is correct [Time = $1/\text{Efficiency}$]

16. Correct Option: A

$$\text{Efficiency of A + B} = 100/(20/3) = 15\%$$

$$\text{No. of days (A:B)} = 4 : 5$$

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Efficiency (A:B) = 5 : 4

∴ Efficiency of B = $(4/9) \times 15 = 20/3 = 6\frac{2}{3}\%$

17. Correct Option: A

Efficiency of A + B = 33.33% = 100/3

Ratio of efficiency of A and B = 3 : 1

∴ Efficiency of A = $(3/4) \times 33.33 = 25\%$

∴ Number of days taken by A = $100/25 = 4$

18. Correct Option: A

Efficiency of (A + B) = 8.33%

Efficiency of (B + C) = 6.66%

Efficiency of (C + A) = 5.00%

∴ Efficiency of A + B + C = $(8.33 + 6.66 + 5) / 2 = 10\%$

∴ Efficiency of C = Efficiency of [(A + B + C) - (A + B)]
= $(10 - 8.33) = 1.66\%$

∴ No. of days required by C alone = $100/1.66 = 60$ days

19. Correct Option: B

Efficiency of (A + B) = 12.5%

Efficiency of (B + C) = 8.33%

Efficiency of (C + A) = 12.5%

∴ Efficiency of [(A + B) + (B + C) + (C + A)] = 33.33%

∴ Efficiency of (A + B + C) = 16.66%

∴ No. of days Required by A, B and C together = $100/16.66 = 6$ days

20. Correct Option: A

(A + B + C)'s 1 day's work = $(1/24) + (1/6) + (1/12) = 7/24$

∴ (A + B + C) can do the entire work in = $24/7 = 3\frac{3}{7}$ days

21. Correct Option: A

Women's 1 day's work = $1/6$

(Women + Daughter)'s 1 day's work = $1/4$

∴ Daughter's 1 day's work = $1/4 - 1/6 = 1/12$

So, the daughter can do the work in 12 days.

22. Correct Option: A

(P + Q)'s 1 day's work = $1/6$

(Q + R)'s 1 day's work = $1/10$

(P + R)'s 1 day's work = $1/5$

On adding, 2 (P + Q + R)'s 1 day's work = $1/6 + 1/10 + 1/5 = 7/15$

(P + Q + R)'s 1 day's work = $7/30$

∴ (P + Q + R)'s can do the entire work in = $30/7 = 4\frac{2}{7}$ days

23. Correct Option: C

As the efficiency of Romil is twice that of Sanjay, Romil, will take x h for completion of the work, when Sanjay is taking 2x h.

Given, $2x - x = 4$

⇒ $x = 4$

Hence, they take = $1/(1/4 + 1/8) = 8/3$ h

24. Correct Option: C

Number of regular hours during 4 weeks = $8 \times 5 \times 4 = 160$

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Amount paid for regular working hours = $160 \times 5 = ₹ 800$

Balance left = $(920 - 800) = ₹ 120$

So, ₹ 120 is paid for his over time at ₹ 8 per h.

∴ Total number of overtime working hours = $120/8 = 15$ h

Total working hours = $(160 + 15) = 175$ h

25. Correct Option: B

Net part filled in 1 h = $(1/20 + 1/30 - 1/40)$

= $7/120$

Hence, the tank will be full in $120/7 = 17 \frac{1}{7}$ h

26. Correct Option: D

Portion of work completed by one man in $1 \frac{1}{2}$ days.

i.e., $3/2$ days = $3/(2 \times 3) = 1/2$

Portion of work completed by one women in $1 \frac{1}{2}$ days.

i.e., $3/2$ days = $3/(2 \times 4) = 3/8$

∴ Portion of work completed by boys = $1 - (1/2 + 3/8) = 1/8$

Now, portion of work completed by each boy in $3/2$ days = $3/(2 \times 12) = 1/8$

Hence, only one boys would be required.

27. Correct Option: D

Efficiency of the leak = $1/6$

Combined efficiency of leak and inlet pipe

So, efficiency of inlet pipe = $1/6 - 1/8 = (4 - 3)/24 = 1/24$

Inlet pipe can fill the tank in 24 h, at rate of 4 L/min.

∴ Capacity = $24 \times 60 \times 4 = 5760$ L

28. Correct Option: B

Work done by A and B in one day = $1/12$

Work done by B and C in one day = $1/15$

Work done by C and A in one day = $1/20$

On adding all these,

$2(A + B + C)$'s work of one day = $1/12 + 1/15 + 1/20 = 1/5$

⇒ $(A + B + C)$'s one day work = $1/10$

∴ A's one day work = $(A + B + C)$'s one day work - $(B + C)$'s one day work

⇒ A's one day work $1/10 - 1/15 = 1/30$

Hence, A can do this work in 30 days.

29. Correct Option: A

Skill ratio of A and B = $8 : 5$

So, the time taken by A and B $5W$ and $8W$, respectively.

According to the question, $1/8W + 1/5W = 1/26$

∴ $W = (13 \times 26)/40$

Now, time taken by B is $8W = 8 \times 13 \times 26/40 = 67 \frac{3}{5}$ days.

30. Correct Option: B

In this question, A and B did the work for 35 days to complete it. A can complete the work in 60 days.

So, A did/A can + B did/B can = 1

⇒ $35/60 + 35/x = 1$

⇒ $x = 84$ days

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