



THE MATH HUB

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TIME & WORK MCQs

100 FULLY SOLVED MCQs

PPSC, FPSC & ONE PAPER EXAMS

NTS • CSS MPT • PMS • Government Job Tests

Work Rate • Efficiency • Man-Days • Wages • Pipes & Cisterns

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TIME & WORK MCQs | 100 FULLY SOLVED QUESTIONS

Fast Time & Work Foundation

One-day work

$$\text{If time} = T, \quad 1\text{-day work} = \frac{1}{T}$$

$$\text{Time} = \frac{1}{\text{rate}}$$

Men-days-hours

$$\text{Work} \propto M \times D \times H \times E$$

For equally efficient workers:

$$M_1 D_1 H_1 = M_2 D_2 H_2$$

Pipes and cisterns Filling rate is positive; emptying rate is negative.

$$\text{Net rate} = \sum \text{inlets} - \sum \text{outlets}$$

$$T = \frac{1}{\text{net rate}}$$

Exam-speed rule Choose a convenient total work, usually the LCM of the individual times. Convert every worker to work-units per day, add or subtract the units, then divide the remaining work by the new daily rate.

Combined work

$$\frac{1}{T} = \frac{1}{A} + \frac{1}{B}$$

$$T = \frac{AB}{A+B}$$

for two workers working together throughout.

Efficiency and time

$$\text{Efficiency} \propto \frac{1}{\text{Time}}$$

$$E_A : E_B = T_B : T_A$$

MCQ 1

A can complete a work in 12 days. What part of the work does A complete in one day?

- A. $\frac{1}{12}$ B. $\frac{1}{6}$
 C. $\frac{1}{10}$ D. $\frac{1}{24}$

Solution

$$1\text{-day work} = \frac{1}{12}$$

$$\boxed{\frac{1}{12}}$$

AnswerBox

(
boxed
frac112
)

MCQ 2

A can complete a work in 15 days. What fraction of the work is completed in 5 days?

- A. $\frac{1}{5}$ B. $\frac{1}{23}$
 C. $\frac{1}{10}$ D. $\frac{1}{3}$

Solution

$$5\text{-day work} = 5 \left(\frac{1}{15} \right) \\ = \frac{5}{15} = \frac{1}{3}$$

AnswerBox

(
boxed
frac13
)

MCQ 3

A completes $\frac{3}{5}$ of a job in 9 days at a constant rate. In how many days will A complete the whole job?

- A. 18 B. 20
 C. 15 D. 12

Solution

$$\frac{3}{5} \text{ work} \rightarrow 9 \text{ days}$$

$$1 \text{ work} \rightarrow 9 \times \frac{5}{3} = 15 \text{ days}$$

AnswerBox

(
boxed15
) days

MCQ 4

A worker completes $\frac{1}{8}$ of a job each day. How many days are required for the whole job?

- A. 12 B. 8
 C. 6 D. 10

Solution

$$\text{Daily work} = \frac{1}{8}$$

$$\text{Time} = \frac{1}{1/8} = 8$$

AnswerBox

(
boxed8
) days

MCQ 5

A completes 25% of a task in 5 days. How many days are required for the complete task?

- A. 20 B. 15
 C. 18 D. 25

Solution

$$25\% = \frac{1}{4}$$

$$\frac{1}{4} \text{ work} = 5 \text{ days}$$

$$1 \text{ work} = 5 \times 4 = 20 \text{ days}$$

AnswerBox

(
boxed20
) days

MCQ 6

A completes 35% of a work in 7 days. At the same rate, how many days are needed for 100%?

- A. 14 B. 18
C. 25 D. 20

Solution

$$35\% \rightarrow 7$$

$$5\% \rightarrow 1$$

$$100\% \rightarrow 20$$

AnswerBox

(
boxed20
) days

MCQ 7

A completes $\frac{3}{8}$ of a work in 6 days. Find the time for the whole work.

- A. 14 B. 18
C. 16 D. 12

Solution

$$\frac{3}{8} \rightarrow 6$$

$$1 \rightarrow 6 \times \frac{8}{3} = 16$$

AnswerBox

(
boxed16
) days

MCQ 8

A completes 0.2 of a job per day. The whole job will be completed in:

- A. 8 B. 5
C. 4 D. 6

Solution

$$0.2 = \frac{1}{5}$$

$$\text{Time} = \frac{1}{1/5} = 5$$

AnswerBox

(
boxed5
) days

MCQ 9

A completes 40% of a job in 8 days. Find the total time.

- A. 20 B. 16
C. 18 D. 24

Solution

$$40\% = \frac{2}{5}$$

$$\frac{2}{5} \rightarrow 8$$

$$1 \rightarrow 8 \times \frac{5}{2} = 20$$

AnswerBox

(
boxed20
) days

MCQ 10

A completes $\frac{2}{7}$ of a work in 4 days. The complete work requires:

- A. 12 B. 16
C. 18 D. 14

Solution

$$\frac{2}{7} \rightarrow 4$$

$$1 \rightarrow 4 \times \frac{7}{2} = 14$$

AnswerBox

(
boxed14
) days

MCQ 11

A takes 5 days to finish $\frac{1}{4}$ of a job. How long will the full job take?

- A. 18 B. 25
C. 20 D. 15

Solution

$$\frac{1}{4} \rightarrow 5$$

$$1 \rightarrow 4(5) = 20$$

AnswerBox

(
boxed20
) days

MCQ 12

A machine produces 12 units per day. How many days are needed to produce 144 units?

- A. 16 B. 12
C. 10 D. 14

Solution

$$\begin{aligned}\text{Time} &= \frac{144}{12} \\ &= 12 \text{ days}\end{aligned}$$

AnswerBox

(
boxed12
) days

MCQ 13

A clerk processes 18 forms per hour. How many hours are required for 126 forms?

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

Solution

$$\begin{aligned}\text{Time} &= \frac{126}{18} \\ &= 7 \text{ hours}\end{aligned}$$

AnswerBox

(
boxed7
) hours

MCQ 14

A worker makes 4 items in 12 minutes. How many items can be made in one hour?

- A. 16 B. 18
C. 24 D. 20

qsourcePast-paper pattern (adapted; values retained only where the arithmetic form is generic).

Solution

$$\begin{aligned}12 \text{ min} &\longrightarrow 4 \\ 60 \text{ min} &= 5(12 \text{ min}) \\ 4 \times 5 &= 20\end{aligned}$$

AnswerBox

(
boxed20
) items

MCQ 15

Three lawns are completed in 2 hours at a constant rate. How many lawns are completed in 10 hours?

- A. 18 B. 20
C. 15 D. 12

qsourcePast-paper pattern (adapted).

Solution

$$\begin{aligned}2 \text{ h} &\longrightarrow 3 \text{ lawns} \\ 10 \text{ h} &= 5(2 \text{ h}) \\ 3 \times 5 &= 15\end{aligned}$$

AnswerBox

(
boxed15
) lawns

MCQ 16

A can finish a work in 10 days and B in 15 days. Working together, they finish it in:

- A. 5 B. 6
C. 7 D. 8

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{10} + \frac{1}{15} \\ &= \frac{25}{150} \\ T &= \frac{150}{25} = 6\end{aligned}$$

AnswerBox

(
boxed6
) days

MCQ 17

A can finish a work in 8 days and B in 24 days. Working together, they finish it in:

A. 6 B. 7

C. 8 D. 5

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{8} + \frac{1}{24} \\ &= \frac{32}{192} \\ T &= \frac{192}{32} = 6\end{aligned}$$

AnswerBox

(
boxed6
) days

MCQ 18

A can finish a work in 6 days and B in 12 days. Working together, they finish it in:

A. 5 B. 6

C. 3 D. 4

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{6} + \frac{1}{12} \\ &= \frac{18}{72} \\ T &= \frac{72}{18} = 4\end{aligned}$$

AnswerBox

(
boxed4
) days

MCQ 19

A can finish a work in 15 days and B in 30 days. Working together, they finish it in:

A. 12 B. 9

C. 10 D. 11

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{15} + \frac{1}{30} \\ &= \frac{45}{450} \\ T &= \frac{450}{45} = 10\end{aligned}$$

AnswerBox

(
boxed10
) days

MCQ 20

A can finish a work in 20 days and B in 30 days. Working together, they finish it in:

A. 11 B. 12

C. 13 D. 14

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{20} + \frac{1}{30} \\ &= \frac{50}{600} \\ T &= \frac{600}{50} = 12\end{aligned}$$

AnswerBox

(
boxed12
) days

MCQ 21

A can finish a work in 16 days and B in 48 days. Working together, they finish it in:

- A. 12 B. 13
C. 14 D. 11

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{16} + \frac{1}{48} \\ &= \frac{64}{768} \\ T &= \frac{768}{64} = 12\end{aligned}$$

AnswerBox
(
boxed12
) days

MCQ 22

A can finish a work in 9 days and B in 18 days. Working together, they finish it in:

- A. 7 B. 8
C. 5 D. 6

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{9} + \frac{1}{18} \\ &= \frac{27}{162} \\ T &= \frac{162}{27} = 6\end{aligned}$$

AnswerBox
(
boxed6
) days

MCQ 23

A can finish a work in 12 days and B in 20 days. Working together, they finish it in:

- A. $\frac{192}{132}$ B. $\frac{152}{172}$
C. $\frac{152}{172}$ D. $\frac{152}{172}$

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{12} + \frac{1}{20} \\ &= \frac{32}{240} \\ T &= \frac{240}{32} = \frac{15}{2}\end{aligned}$$

AnswerBox
(
boxed
 $\frac{15}{2}$
) days

MCQ 24

A can finish a work in 12 days and B in 18 days. Working together, they finish it in:

- A. $\frac{315}{365}$ B. $\frac{415}{465}$
C. $\frac{415}{465}$ D. $\frac{415}{465}$

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{12} + \frac{1}{18} \\ &= \frac{30}{216} \\ T &= \frac{216}{30} = \frac{36}{5}\end{aligned}$$

AnswerBox
(
boxed
 $\frac{36}{5}$
) days

MCQ 25

A can finish a work in 14 days and B in 21 days. Working together, they finish it in:

- A.** $\frac{425}{475}$ **B.** $\frac{525}{375}$
C. $\frac{525}{375}$ **D.** $\frac{375}{525}$

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{14} + \frac{1}{21} \\ &= \frac{35}{294} \\ T &= \frac{294}{35} = \frac{42}{5} = 8\frac{4}{5}\end{aligned}$$

AnswerBox

(
boxed
 $\frac{42}{5}$
) days

MCQ 26

A alone completes a work in 9 days. A and B together complete it in 6 days. B alone takes:

- A.** 15 **B.** 24
C. 15 **D.** 18

Solution

$$\begin{aligned}\frac{1}{B} &= \frac{1}{6} - \frac{1}{9} \\ &= \frac{3}{54} \\ B &= \frac{54}{3} = 18\end{aligned}$$

AnswerBox

(
boxed18
) days

MCQ 27

A alone completes a work in 12 days. A and B together complete it in 8 days. B alone takes:

- A.** 30 **B.** 20
C. 24 **D.** 21

Solution

$$\begin{aligned}\frac{1}{B} &= \frac{1}{8} - \frac{1}{12} \\ &= \frac{4}{96} \\ B &= \frac{96}{4} = 24\end{aligned}$$

AnswerBox

(
boxed24
) days

MCQ 28

A alone completes a work in 12 days. A and B together complete it in 4 days. B alone takes:

- A.** 16 **B.** 6
C. 3 **D.** 12

Solution

$$\begin{aligned}\frac{1}{B} &= \frac{1}{4} - \frac{1}{12} \\ &= \frac{8}{48} \\ B &= \frac{48}{8} = 6\end{aligned}$$

AnswerBox

(
boxed6
) days

MCQ 29

A alone completes a work in 20 days. A and B together complete it in 12 days. B alone takes:

- A. 30 B. 27
C. 36 D. 32

Solution

$$\begin{aligned}\frac{1}{B} &= \frac{1}{12} - \frac{1}{20} \\ &= \frac{8}{240} \\ B &= \frac{240}{8} = 30\end{aligned}$$

AnswerBox

(
boxed30
) days

MCQ 30

A is twice as efficient as B. Together they complete a work in 12 days. B alone will complete it in:

- A. 18 B. 24
C. 48 D. 36

Solution

$$\begin{aligned}A : B &= 2 : 1 \\ \text{Combined rate} &= 3 \text{ units} = \frac{1}{12} \\ B \text{ rate} &= \frac{1}{3} \cdot \frac{1}{12} = \frac{1}{36} \\ B &= 36 \text{ days}\end{aligned}$$

AnswerBox

(
boxed36
) days

MCQ 31

A is 50% more efficient than B. If B alone needs 18 days, A alone needs:

- A. 15 B. 27
C. 12 D. 9

Solution

$$\begin{aligned}A : B &= 150 : 100 = 3 : 2 \\ \text{Time} &\propto \frac{1}{\text{efficiency}} \\ T_A &= 18 \left(\frac{2}{3} \right) = 12\end{aligned}$$

AnswerBox

(
boxed12
) days

MCQ 32

The efficiency ratio of A to B is 3 : 2. Together they complete a job in 10 days. B alone requires:

- A. 15 B. 25
C. 20 D. 30

Solution

$$\begin{aligned}A : B &= 3 : 2 \\ A + B &= 5 \text{ rate units} = \frac{1}{10} \\ B \text{ rate} &= \frac{2}{5} \cdot \frac{1}{10} = \frac{1}{25} \\ B &= 25\end{aligned}$$

AnswerBox

(
boxed25
) days

MCQ 33

A is 25% more efficient than B. If A completes a work in 16 days, B completes it in:

- A. 20 B. 12
C. 18 D. 24

Solution

$$A : B = 125 : 100 = 5 : 4$$

$$T_A : T_B = 4 : 5$$

$$16 : T_B = 4 : 5$$

$$T_B = 20$$

AnswerBox

(
boxed20
) days

MCQ 34

A is three times as efficient as B. If B needs 24 days, A needs:

- A. 6 B. 12
C. 16 D. 8

Solution

$$A : B = 3 : 1$$

$$T_A : T_B = 1 : 3$$

$$T_A = \frac{24}{3} = 8$$

AnswerBox

(
boxed8
) days

MCQ 35

A, B and C alone can do a work in 12, 18, 36 days respectively. Together they need:

- A. 8 B.
frac112
C. 6 D. 7

Solution

$$\frac{1}{T} = \frac{1}{12} + \frac{1}{18} + \frac{1}{36}$$

$$= \frac{1}{6}$$

$$T = 6$$

AnswerBox

(
boxed6
) days

MCQ 36

A, B and C alone can do a work in 10, 15, 30 days respectively. Together they need:

- A.
frac92 B. 5
C. 6 D. 7

Solution

$$\frac{1}{T} = \frac{1}{10} + \frac{1}{15} + \frac{1}{30}$$

$$= \frac{1}{5}$$

$$T = 5$$

AnswerBox

(
boxed5
) days

MCQ 37

A, B and C alone can do a work in 8, 12, 24 days respectively. Together they need:

- A. 4 B. 5
C. 6 D.

$\frac{72}{\text{frac}}$

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{8} + \frac{1}{12} + \frac{1}{24} \\ &= \frac{3}{24} + \frac{2}{24} + \frac{1}{24} \\ &= \frac{6}{24} \\ T &= 4\end{aligned}$$

AnswerBox

(
boxed4
) days

MCQ 38

A, B and C alone can do a work in 15, 20, 30 days respectively. Together they need:

- A. $\frac{233}{\text{frac}}$ B. $\frac{263}{\text{frac}}$
C. $\frac{376}{\text{frac}}$ D. $\frac{203}{\text{frac}}$

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{15} + \frac{1}{20} + \frac{1}{30} \\ &= \frac{4}{60} + \frac{3}{60} + \frac{2}{60} \\ &= \frac{9}{60} \\ T &= \frac{60}{9} = \frac{20}{3}\end{aligned}$$

AnswerBox

(
boxed
 $\frac{203}{\text{frac}}$
) days

MCQ 39

A, B and C alone can do a work in 6, 8, 24 days respectively. Together they need:

- A. 5 B. $\frac{52}{\text{frac}}$
C. 3 D. 4

Solution

$$\begin{aligned}\frac{1}{T} &= \frac{1}{6} + \frac{1}{8} + \frac{1}{24} \\ &= \frac{4}{24} + \frac{3}{24} + \frac{1}{24} \\ &= \frac{8}{24} \\ T &= 3\end{aligned}$$

AnswerBox

(
boxed3
) days

MCQ 40

A+B finish in 12 days, B+C in 15 days, and C+A in 20 days. A+B+C together finish in:

- A. 9 B. 10
C. 12 D. 14
- qsources Past-paper pairwise-work pattern (adapted).

Solution

$$\begin{aligned}2(A + B + C) &= \frac{1}{12} + \frac{1}{15} + \frac{1}{20} \\ 2R &= \frac{5}{60} + \frac{4}{60} + \frac{3}{60} \\ R &= \frac{12}{60} = \frac{1}{5} \\ T &= 5\end{aligned}$$

AnswerBox

(
boxed10
) days

MCQ 41

A+B finish in 8 days, B+C in 12 days, and C+A in 24 days. A+B+C together finish in:

- A. 8 B. 10
C. 12 D. 7

Solution

$$2(A + B + C) = \frac{1}{8} + \frac{1}{12} + \frac{1}{24}$$

$$2R = \frac{1}{6}$$

$$R = \frac{1}{12}$$

$$T = 12$$

AnswerBox

(
boxed
8
) days

MCQ 42

A+B finish in 6 days, B+C in 8 days, and C+A in 12 days. A+B+C together finish in:

- A. $\frac{22}{3}$ B. $\frac{28}{3}$
C. $\frac{13}{6}$ D. $\frac{16}{3}$

Solution

$$2(A + B + C) = \frac{1}{6} + \frac{1}{8} + \frac{1}{12}$$

$$2R = \frac{1}{4}$$

$$R = \frac{1}{8}$$

$$T = 8$$

AnswerBox

(
boxed
 $\frac{16}{3}$
) days

MCQ 43

A and B together finish in 10 days, while A, B and C together finish in 6 days. C alone takes:

- A. 18 B. 20
C. 15 D. 12

Solution

$$\frac{1}{C} = \frac{1}{6} - \frac{1}{10}$$

$$= \frac{5-3}{30} = \frac{2}{30}$$

$$C = 15$$

AnswerBox

(
boxed
15
) days

MCQ 44

A and B together finish in 8 days, while A, B and C together finish in 5 days. C alone takes:

- A. 15 B. $\frac{40}{3}$
C. 10 D. 12

Solution

$$\frac{1}{C} = \frac{1}{5} - \frac{1}{8}$$

$$= \frac{8-5}{40} = \frac{3}{40}$$

$$C = \frac{40}{3}$$

AnswerBox

(
boxed
 $\frac{40}{3}$
) days

MCQ 45

Three equally efficient workers finish a job in 12 days. One worker alone needs:

- A. 36 B. 24
C. 30 D. 48

Solution

$$3 \text{ workers} \times 12 \text{ days} = 36 \text{ worker-days}$$

$$1 \text{ worker} \rightarrow 36 \text{ days}$$

AnswerBox

(
boxed36
) days

MCQ 46

Four equally efficient workers finish a job in 15 days. One worker alone needs:

- A. 45 B. 50
C. 75 D. 60

Solution

$$4 \times 15 = 60 \text{ worker-days}$$

$$1 \text{ worker} = 60 \text{ days}$$

AnswerBox

(
boxed60
) days

MCQ 47

Five equal workers complete a job in 8 days. How many days will 8 equal workers take?

- A. 6 B. 8
C. 5 D. 4

Solution

$$W = 5 \times 8 = 40 \text{ worker-days}$$

$$T = \frac{40}{8} = 5$$

AnswerBox

(
boxed5
) days

MCQ 48

Six equal workers finish a job in 20 days. Ten equal workers will finish it in:

- A. 18 B. 12
C. 10 D. 15

Solution

$$6 \times 20 = 120 \text{ worker-days}$$

$$T = \frac{120}{10} = 12$$

AnswerBox

(
boxed12
) days

MCQ 49

Fifteen equal workers complete a job in 16 days. Twelve equal workers require:

- A. 20 B. 18
C. 22 D. 24

Solution

$$15 \times 16 = 240 \text{ worker-days}$$

$$T = \frac{240}{12} = 20$$

AnswerBox

(
boxed20
) days

MCQ 50

12 men can finish a work in 10 days. How many men are needed to finish the same work in 8 days?

- A. 14 B. 16
C. 18 D. 15

sourcePast-paper pattern (adapted).

Solution

$$12 \times 10 = M \times 8$$

$$M = \frac{120}{8} = 15$$

AnswerBox

(
boxed15
) men

MCQ 51

48 women can complete a work in 15 days. How many women are required to complete it in 20 days?

A. 40 B. 42

C. 36 D. 32

qsourcePast-paper inverse-workforce pattern (adapted).

Solution

$$48 \times 15 = W \times 20$$

$$W = \frac{720}{20} = 36$$

AnswerBox

(
boxed36
) women

MCQ 52

120 workers can finish a work in 75 days. How many workers are required to finish it in 60 days?

A. 180 B. 150

C. 140 D. 160

qsourcePast-paper workforce pattern (adapted).

Solution

$$120 \times 75 = W \times 60$$

$$W = \frac{9000}{60} = 150$$

AnswerBox

(
boxed150
) workers

MCQ 53

18 men working 8 hours per day finish a job in 12 days. If 24 men work 6 hours per day, how many days are needed?

A. 12 B. 9

C. 10 D. 16

Solution

$$18(8)(12) = 24(6)T$$

$$1728 = 144T$$

$$T = 12$$

AnswerBox

(
boxed12
) days

MCQ 54

20 workers, working 6 hours per day, finish a task in 15 days. If 25 workers work 8 hours per day, the task will take:

A. 8 B. 10

C. 12 D. 9

Solution

$$20(6)(15) = 25(8)T$$

$$1800 = 200T$$

$$T = 9$$

AnswerBox

(
boxed9
) days

MCQ 55

16 men can finish a work in 20 days. After 5 days, 4 men leave. How many additional days are needed?

A. 18 B. 25

C. 20 D. 15

Solution

$$W = 16(20) = 320 \text{ man-days}$$

$$\text{Done} = 16(5) = 80$$

$$\text{Remaining} = 320 - 80 = 240$$

$$T = \frac{240}{12} = 20$$

AnswerBox

(
boxed20
) days

MCQ 56

24 workers can finish a job in 18 days. After 6 days, 8 more workers join. The total time from the start is:

- A. 18 B. 15
C. 12 D. 14

Solution

$$W = 24(18) = 432$$

$$\text{Done} = 24(6) = 144$$

$$\text{Remaining} = 288$$

$$\text{New workers} = 32$$

$$\text{More days} = \frac{288}{32} = 9$$

$$\text{Total} = 6 + 9 = 15$$

AnswerBox

(
boxed15
) days

MCQ 57

30 men can finish a work in 24 days. After 8 days, 10 men leave. Find the total completion time.

- A. 32 B. 28
C. 30 D. 36

Solution

$$W = 30(24) = 720$$

$$\text{Done} = 30(8) = 240$$

$$\text{Remaining} = 480$$

$$20 \text{ men need} = \frac{480}{20} = 24 \text{ days}$$

$$\text{Total} = 8 + 24 = 32$$

AnswerBox

(
boxed32
) days

MCQ 58

20 men complete $\frac{3}{5}$ of a work in 12 days. How many men are needed to complete the remaining $\frac{2}{5}$ in 4 days?

- A. 30 B. 35
C. 45 D. 40

Solution

$$20(12) = 240 \text{ man-days} = \frac{3}{5}W$$

$$W = 240 \cdot \frac{5}{3} = 400$$

$$\text{Remaining} = \frac{2}{5}(400) = 160$$

$$M = \frac{160}{4} = 40$$

AnswerBox

(
boxed40
) men

MCQ 59

15 identical machines produce 1200 units in 8 hours. How many units will 10 such machines produce in 12 hours?

- A. 1500 B. 1800
C. 1200 D. 1000

Solution

$$15(8) = 120 \text{ machine-hours}$$

$$10(12) = 120 \text{ machine-hours}$$

$$\therefore \text{output} = 1200$$

AnswerBox

(
boxed1200
) units

MCQ 60

8 workers working 6 hours daily finish a job in 15 days. If 12 workers work 5 hours daily, the job takes:

- A. 16 B. 12
C. 10 D. 14

Solution

$$8(6)(15) = 12(5)T$$

$$720 = 60T$$

$$T = 12$$

AnswerBox

(
boxed12
) days

MCQ 61

10 men finish a work in 12 days, while 8 women finish the same work in 15 days. The efficiency of one man compared with one woman is:

- A. 1:1 B. 2:1
C. 3:2 D. 4:3

Solution

$$10(12) = 120 \text{ man-days}$$

$$8(15) = 120 \text{ woman-days}$$

$$1 \text{ man-day} = 1 \text{ woman-day}$$

$$\text{Efficiency} = 1 : 1$$

AnswerBox

(
boxed1:1
)

MCQ 62

If 6 men can do the same work as 8 women in the same time, the efficiency ratio of one man to one woman is:

- A. 3:4 B. 6:8
C. 2:1 D. 4:3

Solution

$$6M = 8W$$

$$\frac{M}{W} = \frac{8}{6} = \frac{4}{3}$$

$$M : W = 4 : 3$$

AnswerBox

(
boxed4:3
)

MCQ 63

If 3 men can do the same work as 5 women in the same time, one man is how many times as efficient as one woman?

- A. 2 B.
frac83

- C. D.
frac53
frac35

Solution

$$3M = 5W$$

$$M = \frac{5}{3}W$$

AnswerBox

(
boxed
frac53
)

MCQ 64

One man is twice as efficient as one woman. The daily work of 4 men and 6 women is equivalent to how many women?

- A. 16 B. 14
C. 10 D. 12

Solution

$$1M = 2W$$

$$4M = 8W$$

$$8W + 6W = 14W$$

AnswerBox

(
boxed14
) women

MCQ 65

A can do a work in 12 days and B in 18 days. A works alone for 4 days; then B joins. Total time to finish the work is:

- A. $\frac{44}{5}$ B. 8
C. 9 D. 10

Solution

$$A \text{ in 4 days} = \frac{4}{12} = \frac{1}{3}$$

$$\text{Remaining} = \frac{2}{3}$$

$$A + B = \frac{1}{12} + \frac{1}{18} = \frac{5}{36}$$

$$t = \frac{2/3}{5/36} = \frac{24}{5}$$

$$T = 4 + \frac{24}{5} = \frac{44}{5}$$

AnswerBox

(
boxed
 $\frac{44}{5}$
) days

MCQ 66

A can do a work in 10 days and B in 15 days. A works alone for 2 days and then B joins. Total time is:

- A. 6 B. 7
C. 8 D.

$\frac{34}{5}$

Solution

$$\text{Done} = \frac{2}{10} = \frac{1}{5}$$

$$\text{Remaining} = \frac{4}{5}$$

$$A + B = \frac{1}{10} + \frac{1}{15} = \frac{1}{6}$$

$$t = \frac{4/5}{1/6} = \frac{24}{5}$$

$$T = 2 + \frac{24}{5} = \frac{34}{5}$$

AnswerBox

(
boxed
 $\frac{34}{5}$
) days

MCQ 67

A and B can do a work in 8 and 12 days respectively. They work together for 3 days; then B leaves. How many total days are needed?

- A. 7 B. 8
C. 6 D. 5

Solution

$$A + B = \frac{1}{8} + \frac{1}{12} = \frac{5}{24}$$

$$3\text{-day work} = \frac{15}{24} = \frac{5}{8}$$

$$\text{Remaining} = \frac{3}{8}$$

$$A \text{ alone time} = \frac{3/8}{1/8} = 3$$

$$T = 3 + 3 = 6$$

AnswerBox

(
boxed6
) days

MCQ 68

A can do a work in 6 days and B in 12 days. They work together for 2 days; then A leaves. Total time required is:

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

Solution

$$A + B = \frac{1}{6} + \frac{1}{12} = \frac{1}{4}$$

$$2\text{-day work} = \frac{1}{2}$$

$$\text{Remaining} = \frac{1}{2}$$

$$B \text{ time} = \frac{1/2}{1/12} = 6$$

$$T = 2 + 6 = 8$$

AnswerBox

(
boxed8
) days

MCQ 69

A can do a work in 15 days and B in 20 days. They work together for 5 days; then A leaves. Total time is:

- A. $\frac{40}{3}$ B. 12
C. 14 D. 15

Solution

$$A + B = \frac{1}{15} + \frac{1}{20} = \frac{7}{60}$$

$$\text{Done} = 5 \cdot \frac{7}{60} = \frac{7}{12}$$

$$\text{Remaining} = \frac{5}{12}$$

$$B \text{ time} = \frac{5/12}{1/20} = \frac{25}{3}$$

$$T = 5 + \frac{25}{3} = \frac{40}{3}$$

AnswerBox

(
boxed
frac403
) days

MCQ 70

A can finish a work in 4 days and B in 6 days. They work on alternate days, starting with A. The work is completed in:

- A. 4 B. 5
C. 5
frac13 D. 4
frac23

Solution

$$\text{Work in 2 days} = \frac{1}{4} + \frac{1}{6} = \frac{5}{12}$$

$$\text{Work in 4 days} = \frac{10}{12} = \frac{5}{6}$$

$$\text{Remaining} = \frac{1}{6}$$

$$A \text{ needs} = \frac{1/6}{1/4} = \frac{2}{3} \text{ day}$$

$$T = 4\frac{2}{3}$$

AnswerBox

(
boxed4
frac23
) days

MCQ 71

A can finish in 6 days and B in 8 days. They work on alternate days, starting with A. Completion time is:

- A. 6 B. 7
frac12 D. 6
C. 6
frac34

Solution

$$2\text{-day work} = \frac{1}{6} + \frac{1}{8} = \frac{7}{24}$$

$$6\text{-day work} = 3 \cdot \frac{7}{24} = \frac{7}{8}$$

$$\text{Remaining} = \frac{1}{8}$$

$$A \text{ needs} = \frac{1/8}{1/6} = \frac{3}{4} \text{ day}$$

$$T = 6\frac{3}{4}$$

AnswerBox

(
boxed6
frac34
) days

MCQ 72

A can finish in 10 days and B in 15 days. They work on alternate days, starting with B. The work is completed in:

- A. 13 B. 12
C. 10 D. 11

Solution

$$2\text{-day work} = \frac{1}{15} + \frac{1}{10} = \frac{1}{6}$$

$$10\text{-day work} = 5 \cdot \frac{1}{6} = \frac{5}{6}$$

$$\text{Day 11 (B)} = \frac{1}{15} \Rightarrow \text{total} = \frac{9}{10}$$

$$\text{Remaining} = \frac{1}{10}$$

$$\text{Day 12 (A)} = \frac{1}{10}$$

$$T = 12$$

AnswerBox

(
boxed12
) days

MCQ 73

A, B and C can finish a work in 12, 18 and 36 days. A and B work for 3 days, then C joins. Total time is:

- A. 6 B. 6
C. 7 D. 7

frac12

Solution

$$A + B = \frac{1}{12} + \frac{1}{18} = \frac{5}{36}$$

$$3\text{-day work} = \frac{5}{12}$$

$$\text{Remaining} = \frac{7}{12}$$

$$A + B + C = \frac{1}{6}$$

$$t = \frac{7/12}{1/6} = \frac{7}{2}$$

$$T = 3 + \frac{7}{2} = \frac{13}{2} = 6\frac{1}{2}$$

AnswerBox

(
boxed6
frac12
) days

MCQ 74

A can do a work in 20 days and B in 30 days. A works alone for 5 days, then leaves; B finishes the rest. Total time is:

- A. 25 B. 30
C. 32 D. 27

frac12

Solution

$$A \text{ in 5 days} = \frac{5}{20} = \frac{1}{4}$$

$$\text{Remaining} = \frac{3}{4}$$

$$B \text{ time} = \frac{3/4}{1/30} = \frac{45}{2}$$

$$T = 5 + \frac{45}{2} = \frac{55}{2} = 27\frac{1}{2}$$

AnswerBox

(
boxed27
frac12
) days

MCQ 75

A and B together can do a work in 12 days. After working together for 4 days, A leaves and B completes the remaining work in 16 days. B alone can do the whole work in:

- A. 20 B. 30
C. 24 D. 18

Solution

$$\text{Done in 4 days} = \frac{4}{12} = \frac{1}{3}$$

$$\text{Remaining} = \frac{2}{3}$$

$$16 \left(\frac{1}{B} \right) = \frac{2}{3}$$

$$\frac{1}{B} = \frac{1}{24}$$

$$B = 24$$

AnswerBox

(
boxed24
) days

MCQ 76

A and B together can finish in 8 days. After 2 days, B leaves and A finishes the remaining work in 9 days. B alone can do the work in:

- A. 30 B. 24
C. 16 D. 20

Solution

$$\text{Done} = \frac{2}{8} = \frac{1}{4}$$

$$\text{Remaining} = \frac{3}{4}$$

$$9\left(\frac{1}{A}\right) = \frac{3}{4} \Rightarrow A = 12$$

$$\frac{1}{B} = \frac{1}{8} - \frac{1}{12} = \frac{1}{24}$$

$$B = 24$$

AnswerBox

(
boxed24
) days

MCQ 77

A can finish in 12 days and B in 18 days. Both start together, but B leaves 3 days before completion. The job is completed in:

- A. 425 B. 8
C. 9 D. 10

Solution

$$\frac{T}{12} + \frac{T-3}{18} = 1$$

$$3T + 2(T-3) = 36$$

$$5T - 6 = 36$$

$$5T = 42$$

$$T = \frac{42}{5}$$

AnswerBox

(
boxed
frac425
) days

MCQ 78

A and B have efficiency ratio 3 : 2. If they earn Rs 5000 for a joint job, A should receive:

- A. Rs 2000 B. Rs 2500
C. Rs 3500 D. Rs 3000

Solution

$$A : B = 3 : 2$$

$$\text{Total parts} = 5$$

$$A = 5000 \left(\frac{3}{5} \right) = 3000$$

AnswerBox

(
boxedRs 3000
)

MCQ 79

A can do a job in 12 days and B in 18 days. They work together and earn Rs 7500. A's share is:

- A. Rs 4000 B. Rs 5000
C. Rs 4500 D. Rs 3000

Solution

$$\text{Rate ratio} = \frac{1}{12} : \frac{1}{18} = 3 : 2$$

$$A = 7500 \left(\frac{3}{5} \right) = 4500$$

AnswerBox

(
boxedRs 4500
)

MCQ 80

A, B and C can do a job in 10, 15 and 30 days respectively. If total wages are Rs 9000, B receives:

- A. Rs 4500 B. Rs 3000
C. Rs 1500 D. Rs 2500

Solution

$$\frac{1}{10} : \frac{1}{15} : \frac{1}{30} = 3 : 2 : 1$$

$$\text{Total parts} = 6$$

$$B = 9000 \left(\frac{2}{6} \right) = 3000$$

AnswerBox

(
boxedRs 3000
)

MCQ 81

One man is twice as efficient as one woman. Four men and six women earn Rs 7000 for one day. The men as a group should receive:

- A. Rs 4000 B. Rs 3000
C. Rs 3500 D. Rs 5000

Solution

$$4M = 8W$$

$$\text{Contribution ratio} = 8 : 6 = 4 : 3$$

$$\text{Men share} = 7000 \left(\frac{4}{7} \right) = 4000$$

AnswerBox

(
boxedRs 4000
)

MCQ 82

A can do a job in 10 days and B in 15 days. Each works for 5 days. If wages are Rs 4000, A receives:

- A. Rs 1600 B. Rs 2000
C. Rs 2500 D. Rs 2400

Solution

$$A \text{ work} = \frac{5}{10} = \frac{1}{2}$$

$$B \text{ work} = \frac{5}{15} = \frac{1}{3}$$

$$A : B = \frac{1}{2} : \frac{1}{3} = 3 : 2$$

$$A = 4000 \left(\frac{3}{5} \right) = 2400$$

AnswerBox

(
boxedRs 2400
)

MCQ 83

A and B together finish a work in 10 days. A alone takes 15 days. If they earn Rs 6000 together, B's share is:

- A. Rs 2500 B. Rs 3000
C. Rs 2000 D. Rs 1500

Solution

$$\frac{1}{B} = \frac{1}{10} - \frac{1}{15} = \frac{1}{30}$$

$$A : B = \frac{1}{15} : \frac{1}{30} = 2 : 1$$

$$B = 6000 \left(\frac{1}{3} \right) = 2000$$

AnswerBox

(
boxedRs 2000
)

MCQ 84

One man is 1.5 times as efficient as one woman. Six men and eight women earn Rs 17000. The women as a group receive:

- A. Rs 10000 B. Rs 8000
C. Rs 7000 D. Rs 9000

Solution

$$1M = 1.5W$$

$$6M = 9W$$

$$\text{Men:Women contribution} = 9 : 8$$

$$\text{Women share} = 17000 \left(\frac{8}{17} \right) = 8000$$

AnswerBox

(
boxedRs 8000
)

MCQ 85

A pipe fills a tank in 6 hours and a leak empties it in 12 hours. If both are open, the tank fills in:

- A. 12 B. 6
C. 8 D. 18

Solution

$$\text{Net rate} = \frac{1}{6} - \frac{1}{12} = \frac{1}{12}$$

$$T = 12 \text{ hours}$$

AnswerBox

(
boxed12
) hours

MCQ 86

An inlet fills a tank in 4 hours and an outlet empties it in 6 hours. With both open, the tank fills in:

- A. 8 B. 10
C. 24 D. 12

Solution

$$\text{Net rate} = \frac{1}{4} - \frac{1}{6}$$

$$= \frac{3-2}{12} = \frac{1}{12}$$

$$T = 12$$

AnswerBox

(
boxed12
) hours

MCQ 87

Pipe A fills a tank in 3 hours and pipe B fills it in 6 hours. Together they fill it in:

- A. 3 B. 4
C. 2 D. 1

Solution

$$\frac{1}{T} = \frac{1}{3} + \frac{1}{6} = \frac{1}{2}$$

$$T = 2$$

AnswerBox

(
boxed2
) hours

MCQ 88

Pipe A fills a tank in 4 hours and pipe B in 12 hours. Together they require:

- A. 6 B. 3
C. 2 D. 4

Solution

$$\frac{1}{T} = \frac{1}{4} + \frac{1}{12} = \frac{1}{3}$$

$$T = 3$$

AnswerBox

(
boxed3
) hours

MCQ 89

Two inlet pipes fill a tank in 5 and 10 hours, while a leak empties it in 20 hours. With all open, the tank fills in:

- A. 4 B. 3
C. 5 D. 8

Solution

$$\text{Net} = \frac{1}{5} + \frac{1}{10} - \frac{1}{20}$$

$$= \frac{4+2-1}{20} = \frac{1}{4}$$

$$T = 4$$

AnswerBox

(
boxed4
) hours

MCQ 90

Two pipes fill a tank in 6 and 8 hours, while an outlet empties it in 24 hours. All three together fill the tank in:

- A. 3 B. 5
C. 6 D. 4

Solution

$$\text{Net} = \frac{1}{6} + \frac{1}{8} - \frac{1}{24}$$

$$= \frac{4+3-1}{24} = \frac{6}{24} = \frac{1}{4}$$

$$T = 4$$

AnswerBox

(
boxed4
) hours

MCQ 91

A pipe fills a tank in 8 hours, but a leak can empty the full tank in 12 hours. With both open, filling takes:

- A. 20 B. 30
C. 24 D. 16

Solution

$$\begin{aligned}\text{Net} &= \frac{1}{8} - \frac{1}{12} \\ &= \frac{3-2}{24} = \frac{1}{24} \\ T &= 24\end{aligned}$$

AnswerBox

(
boxed24
) hours

MCQ 92

Pipes A and B fill a tank in 10 and 15 hours, while pipe C empties it in 30 hours. All are opened together. Time required is:

- A. 10 B.
frac152
C. 6 D. 8

Solution

$$\begin{aligned}\text{Net} &= \frac{1}{10} + \frac{1}{15} - \frac{1}{30} \\ &= \frac{3+2-1}{30} = \frac{4}{30} = \frac{2}{15} \\ T &= \frac{15}{2}\end{aligned}$$

AnswerBox

(
boxed
frac152
) hours

MCQ 93

Pipe A fills a tank in 3 hours. It is opened alone for 1 hour; then pipe B, which fills in 6 hours, is also opened. Total filling time is:

- A. 2 B. 2
frac13

- C. 2 D. 3
frac12

qsourcePast-paper delayed-pipe pattern (adapted).

Solution

$$A \text{ in } 1 \text{ h} = \frac{1}{3}$$

$$\text{Remaining} = \frac{2}{3}$$

$$A + B = \frac{1}{3} + \frac{1}{6} = \frac{1}{2}$$

$$t = \frac{2/3}{1/2} = \frac{4}{3}$$

$$T = 1 + \frac{4}{3} = \frac{7}{3} = 2\frac{1}{3}$$

AnswerBox

(
boxed2
frac13
) hours

MCQ 94

Pipe A fills a tank in 4 hours. It runs alone for 1 hour, then pipe B (6 hours) is opened too. Total filling time is:

A. 2 B. 2

frac12

C. 3 D. 2

frac45

Solution

$$\text{Done} = \frac{1}{4}$$

$$\text{Remaining} = \frac{3}{4}$$

$$A + B = \frac{1}{4} + \frac{1}{6} = \frac{5}{12}$$

$$t = \frac{3/4}{5/12} = \frac{9}{5}$$

$$T = 1 + \frac{9}{5} = \frac{14}{5} = 2\frac{4}{5}$$

AnswerBox

(
boxed2
frac45
) hours

MCQ 95

A tank holds 1200 litres. A pipe supplies 200 litres per minute. Ignoring losses, filling time is:

A. 8 B. 10

C. 6 D. 5

Solution

$$T = \frac{1200}{200} = 6$$

AnswerBox

(
boxed6
) minutes

MCQ 96

An inlet supplies 150 L/min and an outlet drains 50 L/min. For a 1000 L tank, the net filling time is:

A. 15 B. 10

C. 8 D. 12

Solution

$$\text{Net flow} = 150 - 50 = 100 \text{ L/min}$$

$$T = \frac{1000}{100} = 10$$

AnswerBox

(
boxed10
) minutes

MCQ 97

A full tank can be emptied by an outlet in 8 hours, while an inlet can fill it in 12 hours. If both are opened on a full tank, it becomes empty in:

A. 24 B. 12

C. 18 D. 30

Solution

$$\text{Net emptying rate} = \frac{1}{8} - \frac{1}{12}$$

$$= \frac{1}{24}$$

$$T = 24$$

AnswerBox

(
boxed24
) hours

MCQ 98

Two outlets can empty a full tank separately in 10 and 15 hours. Together they empty it in:

A. 5 B. 8

C. 12 D. 6

Solution

$$\frac{1}{T} = \frac{1}{10} + \frac{1}{15}$$

$$= \frac{3+2}{30} = \frac{1}{6}$$

$$T = 6$$

AnswerBox

(
boxed6
) hours

MCQ 99

A tank is already half full. An inlet can fill the whole tank in 8 hours and an outlet can empty the whole tank in 12 hours. If both are opened, how long will the remaining half take to fill?

- A. 16 B. 24
C. 12 D. 8

Solution

$$\text{Net rate} = \frac{1}{8} - \frac{1}{12} = \frac{1}{24}$$

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

$$T = \frac{1/2}{1/24} = 12$$

AnswerBox

(
boxed12
) hours

MCQ 100

A pipe fills a tank in 9 hours and an outlet empties it in 18 hours. If both remain open, the tank fills in:

- A. 27 B. 18
C. 9 D. 12

Solution

$$\text{Net} = \frac{1}{9} - \frac{1}{18} = \frac{1}{18}$$

$$T = 18$$

AnswerBox

(
boxed18
) hours

Rapid Revision Grid - Time & Work

Core shortcuts

$$1\text{-day work} = \frac{1}{T}$$

$$T_{A+B} = \frac{AB}{A+B}$$

$$E_A : E_B = T_B : T_A$$

$$M_1 D_1 H_1 = M_2 D_2 H_2$$

Contribution / wages When workers work for the same time:

$$\text{Wage share} \propto \text{daily efficiency}$$

When times differ:

$$\text{Wage share} \propto \text{rate} \times \text{time}$$

Pipes

$$\text{Inlet} = +\frac{1}{T}, \quad \text{Outlet} = -\frac{1}{T}$$

$$\text{Net time} = \frac{1}{\text{net rate}}$$

Fast check More workers or greater efficiency must reduce the required time. An outlet or leak must increase filling time. These two checks eliminate many wrong options before full calculation.