(A) :- TIME & WORK :- (6)

1. (b) P can Complete the Work in → $\left(\frac{5}{1\cancel{8}_{4}} \times \frac{5}{\cancel{2}_{1}}\right)$ days = 25 days

Q can complete the Work in → $\left(\frac{4}{1\cancel{6}} \times \frac{5}{\cancel{4}_{1}}\right)$ days = 20 days

So; both will Complete the Work in → $\left(\frac{20 \times \cancel{25}^{5}}{\cancel{45}_{9}}\right) = \boxed{11\frac{1}{9}}$

2. (a) Let B take x days to complete the Work.

A can do $\frac{1}{2}$ of the Work in $\frac{x}{6}$ days.

A " 1 " " $\frac{2x}{6}$ " $= \frac{x}{3}$ days

∴ According to the question :—

$\frac{1}{2} + \frac{x}{3} = \frac{1}{20} \Rightarrow x = 80$ days

3. (c) $\frac{30 \times 30}{\frac{1}{3}} = \frac{M \times 30}{\frac{2}{3}}$

$\Rightarrow 30 \times \cancel{30} \times \frac{2}{\cancel{3}} = M \times \cancel{30} \times \frac{1}{\cancel{3}} \Rightarrow M = 60$

∴ Extra men = $(60 - 30) = \boxed{30 \text{ men}}$

4. (c) $\frac{\cancel{50}^{2} \times 150}{\frac{3}{4}} = \frac{M \times 25}{\frac{1}{4}} \Rightarrow$

$W_1 = \frac{150}{200} = \frac{3}{4}$ part

$\Rightarrow M \times \cancel{3} = 2 \times \cancel{150}^{50} \times \frac{1}{\cancel{4}} = 100$

Extra men = $(100 - 50) = \boxed{50 \text{ men}}$

5. (b) R can do the Work in →

$\frac{1}{6} - \left(\frac{1}{15} + \frac{1}{12}\right) = \frac{1}{60}$ part of job or 60 days

∴ Ratio of Work done by P : Q : R →

$\frac{1}{15} : \frac{1}{12} : \frac{1}{60} \rightarrow 4 : 5 : 1$

So; the Share of R is = $\left(120\cancel{0} \times \frac{1}{1\cancel{0}}\right)$

$= \boxed{₹ 120}$

(A) :- Time & Work :- <7>

6) A man can do a Work in 32 days. P Who is 60% more efficient than A

6 (b) Work Ratio :→ P : A
160 : 100

∴ Time Ratio :→ 100 : 160
×4 (5 : 8) ×4
20 32

Now, (P+A) together
$\frac{5}{\frac{26 \times 32}{52}}$
13
$= \boxed{\frac{160}{13} \text{ days}}$

7. (b) Let Q can Complete a Work in ▲ x days.
∴ P can do $\frac{1}{2}$ of the job in $\frac{3x}{4}$ days.
P " " 1 " " " $\frac{3x}{4} \times 2 = \frac{3x}{2}$ days.

Now; $\frac{2}{3x} + \frac{1}{x} = \frac{1}{24}$
$\Rightarrow \frac{1}{x}\left(\frac{2}{3}+1\right) = \frac{1}{24}$
$\Rightarrow \frac{1}{2} \times \frac{5}{3} = \frac{1}{24}x$
$\Rightarrow x = 40$
∴ P Will take $= (40 \times \frac{3}{2})$
$= \boxed{60 \text{ days}}$

8 (b) $\frac{12 \times (15+3)}{12+15} = \frac{\cancel{12} \times \cancel{18}^{2}}{\cancel{27}_{3}} = \boxed{8 \text{ days}}$

9 (d) In one hour number of pages type by neha $= (\frac{40}{5}) = 8$ pages
In One hour " " " Sunil $= (\frac{60}{6}) = 10$ "
Now type 180 pages they Will take $= \frac{180}{(10+8)} = \boxed{10 \text{ hrs}}$

10 (a) (P+Q+R) together take to Complete the Work is →
$\frac{1}{2}\left(\frac{1}{90} + \frac{1}{60} + \frac{1}{45}\right) = \frac{1}{2}\left(\frac{2+3+4}{180}\right) = \frac{1}{40}$ part of job
∴ It takes Only 40 days

(A) :- Time & Work :-

11. (c) $4W = 3B$ [Hence W = Women; B = Boys]

$\times 5$ ($20W$) $= 15B$ $\times 5$

$\therefore 20M + 10B = (15+10)B = 25B$

Now; $W = \frac{3}{4}B \Rightarrow 15W = \left(\frac{3}{4}\times 15\right)B = \frac{45}{4}B$

$\therefore$ Total $15W + 30B = \left(\frac{45}{4}+30\right)B = \frac{165}{4}B$

$\therefore M_1D_1 = M_2D_2 \Rightarrow 25 \times 36 = \frac{165}{4} \times D_2$

$\Rightarrow D_2 = \boxed{\frac{200}{11} \text{ days}}$

12. (b) $(P+Q+R) \rightarrow$ together can do the work in $\rightarrow \left(\frac{1}{6}+\frac{1}{8}+\frac{1}{12}\right)$

$= \left(\frac{4+3+2}{24}\right) = \frac{9}{24}$ part

$\therefore$ No. of days $= \left(\frac{24}{9}\right) = \boxed{\frac{8}{3} \text{ days}}$

13. (b) $\frac{20}{\frac{36}{12}+\frac{8}{5}} \Rightarrow \frac{20}{\frac{15+16}{10}} = \boxed{\frac{200}{31} \text{ days}}$

14. (b) Let daily work done by a men and a boy are M and B respectively.

$\therefore 3(5M + 10B) = 2(8M + 12B)$

$\Rightarrow 15M + 30B = 16M + 24B$

$\Rightarrow M = 6B$

$M : B = \boxed{6:1}$

15. (b) $M_1D_1 = M_2D_2$

$\Rightarrow x \times 45 = (x-10) \times 60 \Rightarrow 3x = 4x - 40 \Rightarrow \boxed{x = 40}$

16. (b) Work Ratio :⟶ P : S = 2 : 1

Time Ratio :⟶ 1 : 2

$\therefore (2-1)$ unit $= 30$ days

1 " $= 30$ days.

2 " $= 60$ days.

Together can do it :⟶ $\left(\frac{36\times 60}{90}\right)$ days

$= \boxed{20 \text{ days}}$

(A) :- TIME & WORK :- <9>

17 (d) LCM of 5, 1 and 2 is 20.
Let total part of job be 20 units.

Now; Efficiency of x, y and z are given below

x	y	x+y+z	z
4 unit	5 unit	10 unit.	1 unit

$\therefore$ Ratio :→ x : y : z
4 : 5 : 1

$z = (5000 \times \frac{1}{10}) = \boxed{500}$

18 (a) $(9M + 12W)$ is equal with 3 times of $(3M + 4W)$.
Now; $(3M + 4W)$ can complete the Work in $(12 \times 3) = \boxed{36 \text{ day}}$

19 (d) let Q = x days ; then P = $(x-6)$ days.

$\therefore \frac{1}{(x-6)} + \frac{1}{x} = \frac{1}{4}$

$\Rightarrow \frac{x + x - 6}{(x-6) \cdot x} = \frac{1}{4}$

$\Rightarrow 4(2x-6) = x^2 - 6x$

$\Rightarrow 8x - 24 = x^2 - 6x$

$\Rightarrow x^2 - 14x + 24 = 0$

$\Rightarrow x^2 - 12x - 2x + 24 = 0$

$\Rightarrow x(x-12) - 2(x-12) = 0$

$\Rightarrow \therefore \boxed{x = 12}$; $x \neq -2$

20 (c) Work Ratio of :→ $x : y = 2 : 1 \Rightarrow y : x = 1 : 2$
$x : z = 3 : 1 \rightarrow x : z = 3 : 1$
$y : x : z = 3 : 6 : 2$

$\therefore$ Time Ratio of $y : x : z$ is → $2 : 1 : 3$

$\therefore \frac{1}{a}\left(\frac{1}{2} + \frac{1}{1} + \frac{1}{3}\right) = \frac{1}{6} \Rightarrow a = 11$

$\therefore z = 3a = \boxed{33 \text{ days}}$

21 (c) A do it in 5 days :→ $\frac{5}{30} = \frac{1}{6}$ part of job.

$\therefore$ Remaining Work be → $(1 - \frac{1}{6}) = \frac{5}{6}$ part

$\therefore$ B do the remaining Work in → $\left(\frac{6}{36} \times \frac{5}{6}\right)$
$= \boxed{30 \text{ days}}$

[A] : TIME & WORK :-

22. (b) LCM of 8 and 18 is 72.
Let the total work be 72 units.
∴ B can do in 1 day → $\left(\frac{72}{18}\right)$ = 4 units of job.
A " " " 1 day → $\left(\frac{72}{8}\right)$ = 9 " " "

(B+A) together in 2 day can do → 13 units of job
×5 ( ) ×5 "
10 days " " → 65 units.

∴ Remaing work is → (72 − 65) = 7 units
∴ B do it in 1 day → 4 units.
then, A " " $\frac{1}{3}$ → 3 unit
∴ Total time taken by A & B is $\left(10+1+\frac{1}{3}\right) = \boxed{11\frac{1}{3} \text{ day}}$

23. (b) Let the Work be Completed in x days.

$$\therefore \frac{4}{10} + \frac{(x-4)}{12} + \frac{x}{15} = 1$$

$$\Rightarrow \frac{24 + 5(x-4) + 4x}{60}$$

$$\Rightarrow 24 + 5x - 20 + 4x = 60$$

$$\Rightarrow 9x = 56$$

$$\Rightarrow x = \frac{56}{9}$$

$$\Rightarrow x = \boxed{6\frac{2}{9} \text{ days}}$$

24. (a) LCM of 10, 12 and 15 is 60.
Let the total Work be 60 units.
∴ Work Efficiency of A, B and C respectively is given below

A	B	C
6 units	5 units	4 units

In last 3 days A and C do the Work.

∴ In last 3 days (A+C) done 30 units of job. Her A = 30 unit & B = 10 unit
∴ A done 30 units and B done 10 unit
∴ part of job = $\frac{40}{60} = \boxed{\frac{2}{3} \text{ part}}$

25. (d) A and B together Can do the Work in → $\sqrt{125 \times 5} = \boxed{25}$