

O.S.

Q. 1	Allocation				Max				Available				Need			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
P ₁	2	0	1	2	2	2	1	2	1	4	0	0	0	2	0	0
P ₂	1	0	0	0	1	7	5	0					0	7	5	0
P ₃	1	3	5	4	2	3	5	6					1	0	0	2
P ₄	0	6	3	2	0	6	5	2					0	0	2	0
P ₅	0	0	1	4	0	6	5	6					0	6	4	2

we know; $\text{Need} = \text{Allocation} - \text{Max}$.

we ~~now~~ know, that for criteria to be met

$$\text{Need} \leq \text{Available}$$

for P₁ ; $(0, 2, 0, 0) \leq (1, 4, 0, 0)$

\therefore criteria not fulfilled, \therefore P₁ not allocated

for P₂ $(0, 7, 5, 0) \leq (1, 4, 0, 0)$

\therefore criteria not fulfilled, \therefore P₂ not allocated

for P₃ $(1, 0, 0, 2) \leq (1, 4, 0, 0)$

for P₁;

$$(0, 2, 0, 0) \leq (1, 4, 0, 0)$$

✓
Criteria met

$$\begin{array}{r} \therefore \\ + \quad \begin{array}{cccc} 2 & 2 & 1 & 2 \\ 1 & 4 & 0 & 0 \end{array} \\ \hline \end{array}$$

New Available. \rightarrow
 $\underline{\quad 3 \quad 6 \quad 1 \quad 2 \quad}$

for P₂;

$$(0, 7, 5, 0) \leq (3, 6, 1, 2)$$

X
Criteria not met

for P₃;

$$(1, 0, 0, 2) \leq (3, 6, 1, 2)$$

✓
Criteria met

$$\begin{array}{r} \quad \begin{array}{cccc} 2 & 3 & 5 & 6 \\ + \quad 3 & 6 & 1 & 2 \end{array} \\ \hline \end{array}$$

New Available \rightarrow
 $\underline{\quad 5 \quad 9 \quad 6 \quad 8 \quad}$

for P₄; $(0, 0, 2, 0) \leq (5, 9, 6, 8)$

✓
Criteria met

Now, Since Criteria is met, \therefore we can grant the request for P₄.

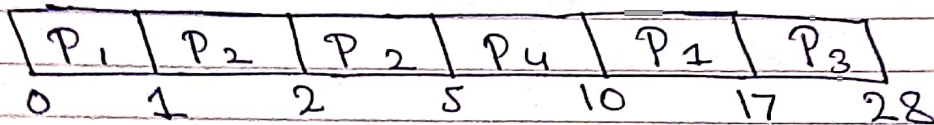
Q.2) Processes

	AT	BT	CT	TAT	WT
P ₁	0	8	17	17	9
P ₂	1	4	5	4	0
P ₃	2	9	28	26	15
P ₄	3	5	10	7	2

(i) SJF (Preemptive)

Gantt Chart

∴ Avg. WT = 6.5



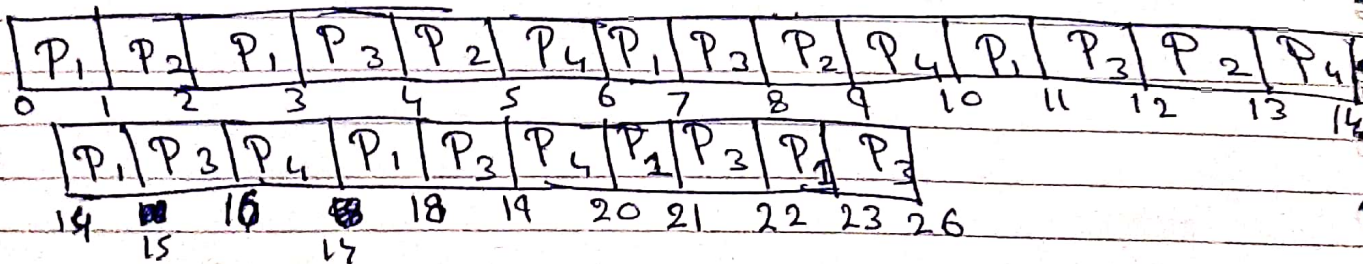
(ii) Round Robin

Ready Queue

P₁ P₂ P₁ P₂ P₂ P₄ P₁ P₃ P₂ P₄ P₁ P₃ P₂ P₄ P₁ P₃ P₄ P₁ ⊗

⊗ P₃ P₄ P₁ P₃ P₁ P₃

Gantt Chart



Process	AT	BT	CT	TAT	WT
P ₁	0	8	23	23	15
P ₂	1	4	13	12	8
P ₃	2	9	26	24	15
P ₄	3	5	20	17	12

$\therefore \text{Avg. wt.} = 12.5$