

Name: Affan Ahmad
Enrollment: 03-134221-003

Assignment No (2) OS

BSLS 5-A

FCFS: (Non preemptive)

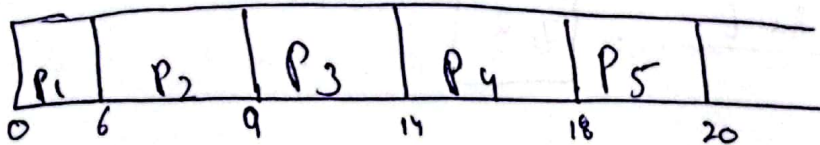
Without arrival time:

PB	Burst time	Completion	TAT	WT
P ₁	6	6	6	0
P ₂	3	9	9	6
P ₃	5	14	14	9
P ₄	4	18	18	14
P ₅	2	20	20	18

TAT
↓
CT-AT

WT
↓
TAT-BT

Ganttchart:



$$\overline{TAT} = \frac{6 + 9 + 14 + 18 + 20}{5} = 13.4$$

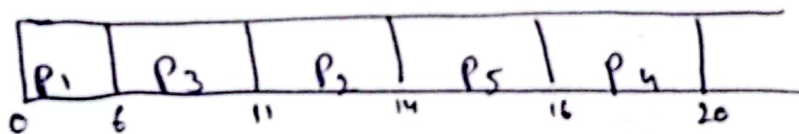
$$\overline{WT} = \frac{0 + 6 + 9 + 14 + 18}{5} = 9.4$$

(2)

c. FCFS (with Arrival time)

P	P	A.T	B.T	C.T	TAT	WT
P ₁	P ₁	0	6	6	6	0
P ₂	P ₂	4	3	14	10	7
P ₃	P ₃	2	5	11	9	4
P ₄	P ₄	12	4	20	8	4
P ₅	P ₅	10	2	16	6	4

Gantt chart:



$$T \quad TAT = \frac{6 + 10 + 9 + 8 + 6}{5} = \boxed{7.8}$$

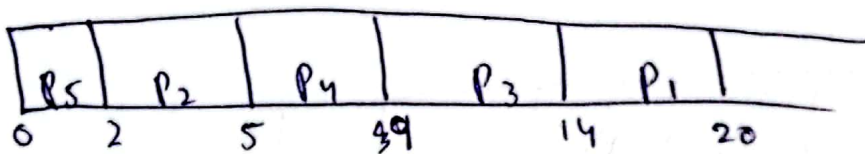
$$W \quad WT = \frac{0 + 7 + 4 + 4 + 4}{5} = \boxed{3.8}$$

(2)

SJF (Preemptive, without Arrival Time)

P	B.T	L.T	TAT	W.T
P ₁	6	20	20	14
P ₂	3	5	5	2
P ₃	5	14	14	9
P ₄	4	9	9	5
P ₅	2	2	2	0

Gantt chart:



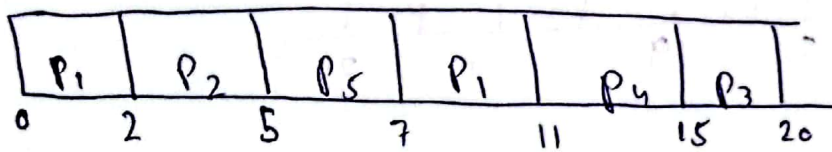
$$TAT = \frac{20 + 5 + 14 + 9 + 2}{5} = \boxed{10}$$

$$W.T = \frac{14 + 2 + 9 + 5 + 0}{5} = \boxed{6}$$

SJF (preemptive with Arrival Time)

P	A.T	B.T	C.T	TAT	WT
* P ₁	0	6	11	11	5
x P ₂	2	3	5	3	0
P ₃	6	5	20	14	9
P ₄	10	4	15	5	1
x P ₅	3	2	7	4	2

Gantt chart:



$$TAT = \frac{11 + 3 + 14 + 5 + 4}{5} = \boxed{7.4}$$

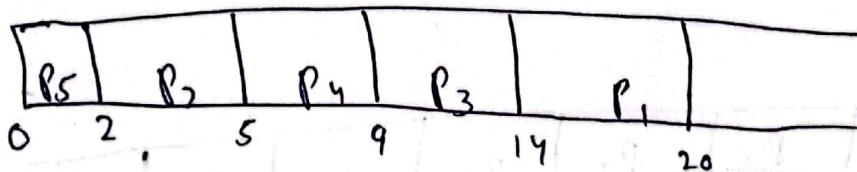
$$WT = \frac{5 + 0 + 9 + 1 + 2}{5} = \boxed{3.4}$$

③

Priority (preemptive, without Arrival Time)

P	B.T	C.T	TAT	WT	Priority(P)
P ₁	6	20	20	14	5
P ₂	3	5	5	2	2
P ₃	5	14	14	9	4
P ₄	4	9	9	5	3
P ₅	2	2	2	0	1

Gantt charts



$$TAT = \frac{20 + 5 + 14 + 9 + 2}{5} = 10$$

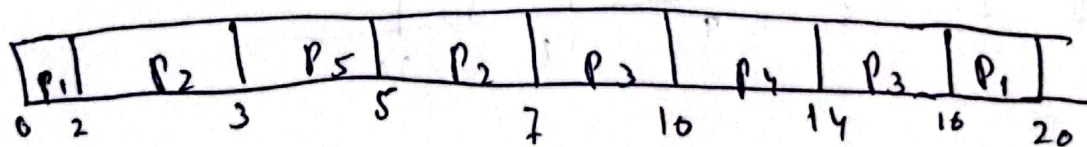
$$WT = \frac{14 + 2 + 9 + 5 + 0}{5} = 6$$

number
minimum priority
↓
higher priority

Priority (preemptive, with Arrival Time)

Process	A.T	B.T	Priority	L.T	TAT	W.T
P ₁	0	6	5	20	20	14
P ₂	2	8	2	7	5	2
P ₃	6	8	4	16	10	5
P ₄	10	4	3	14	4	0
P ₅	3	2	1	5	2	0

Gantt chart:



$$TAT = \frac{20 + 5 + 10 + 4 + 2}{5} = 8.2$$

$$W.T = \frac{14 + 2 + 5}{5} = 4.2$$

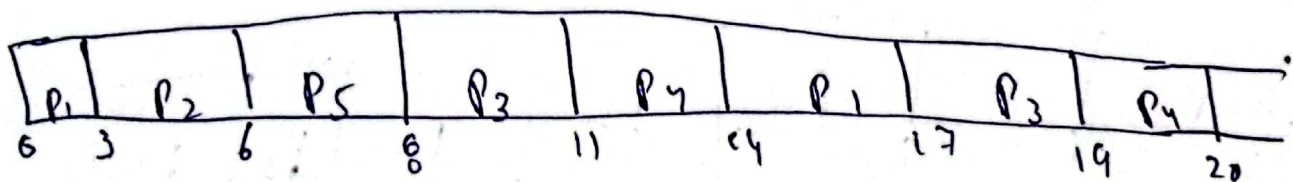
(4)

Round Robin (preemptive, with Arrival time)

$$T.Q = 3$$

P	A.T	B.T	C.T	TAT	WT
P ₁	0	63	17	17	11
P ₂	2	3	6	4	1
P ₃	6	82	14	13	8
P ₄	10	41	20	10	6
P ₅	3	2	8	5	3

Gantt chart:



$$TAT = \frac{17 + 4 + 13 + 10 + 5}{5} = \boxed{9.8}$$

$$WT = \frac{11 + 1 + 8 + 6 + 3}{5} = \boxed{5.8}$$