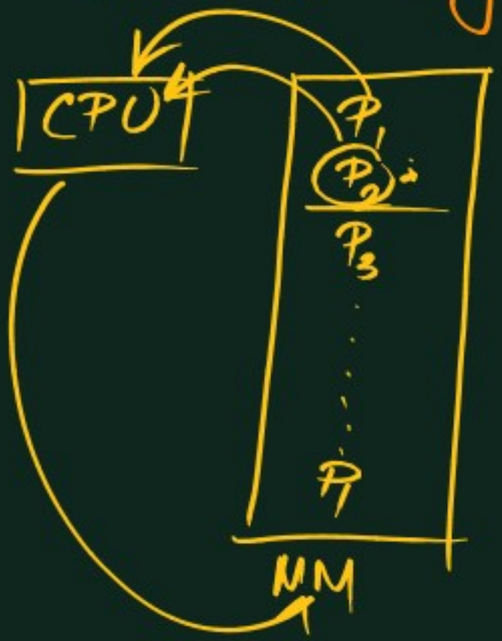
CPU Scheduling Algorithms

Multiprogramming (Non-preemptive)
Preemptive



Preemption

Metrics of Processes

I) AT → Arrival time (Point)
II) BT → Burst time (Dura..)
III) CT → Completion Time (Point)
IV) TAT → Turn Around Time (CT − AT) (Dura..)
V) WT → Waiting Time (TAT − BT)

VI) RT (Response Time)

1) FCFS

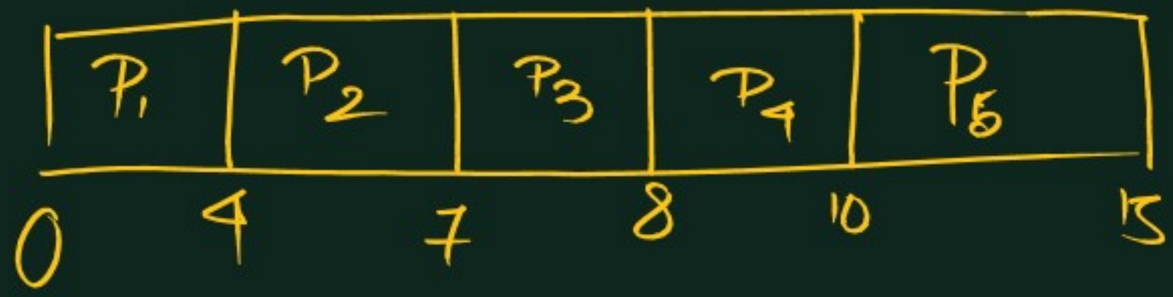
First Come First Served

Criteria: AT

Mode: Non-preemptive

Pno.	AT	BT	CT	TAT	WT
1	0	4	4	4	0
2	1	3	7	6	3
3	2	1	8	6	5
4	3	2	10	7	5
5	4	5	15	11	6
.....					

Gantt Chart:

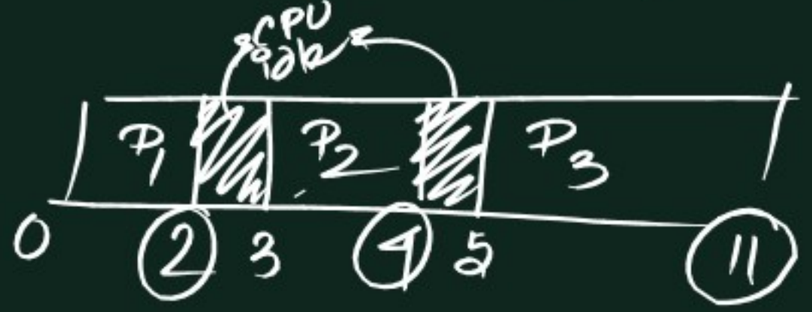


AWT

$$\frac{0+3+5+5+6}{5}$$

1.

PNo.	AT	BT	CT	TAT	WT
1	0	2	2	2	0
2	3	1	4	1	0
3	5	6	11	6	0



2.

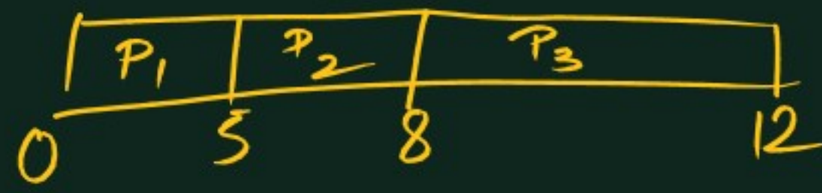
PNo.	AT	BT	CT	TAT	WT
1	0	10	10	10	6
2	0	4	14	14	10
3	0	6	20	20	14

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

3.

PNo.	AT	BT	CT	TAT	WT
1	0	5	5	5	0
2	2	3	8	6	3
3	4	4	12	8	4

$\frac{7}{3}$



2) SJF

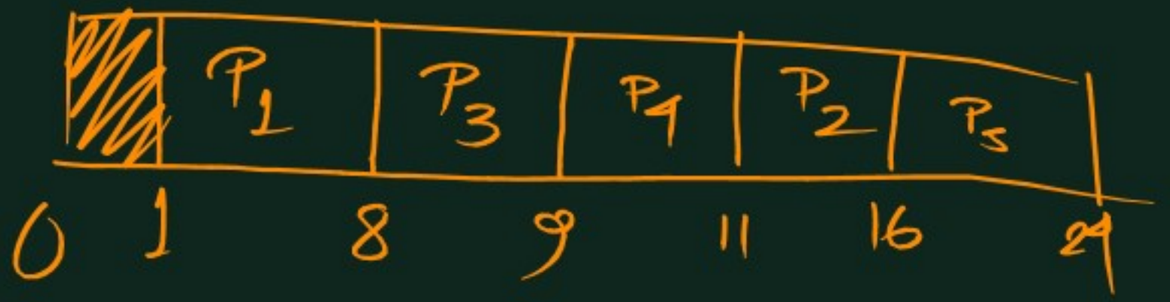
Shortest Job first

Criteria: BT

Mode: Non-preemptive

	P No.	AT	BT	CT	TAT	WT
X	1	1	7	8	7	0
	2	2	5	16	14	9
	3	3	1	9	6	5
	4	4	2	11	7	5
	5	5	8	24	19	11

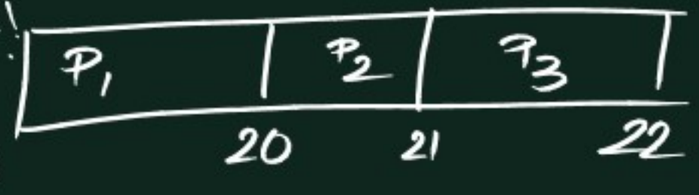
$\frac{30}{5}$ = AWT



1.

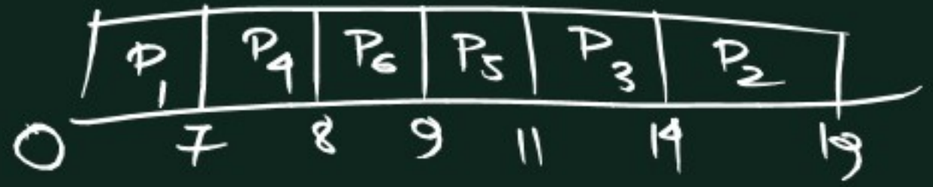
PNo.	AT	BT	CT	TAT	WT
1	0	20	20	20	0
2	1	1	21	20	19
3	2	1	22	20	19

CONVOY EFFECT!!



2.

PNo.	AT	BT	CT	TAT	WT
1	0	7	7	7	0
2	1	5	19	18	13
3	2	3	14	12	9
4	3	1	8	5	4
5	4	2	11	7	5
6	5	1	9	4	3



3.

PNo.	AT	BT
1	3	1
2	1	4
3	4	2
4	0	6
5	2	3

4.

PNo.	AT	BT
1	0	9
2	1	4
3	2	9

5.

PNo.	AT	BT
1	0	20
2	15	15
3	30	10
4	45	15

SRTF