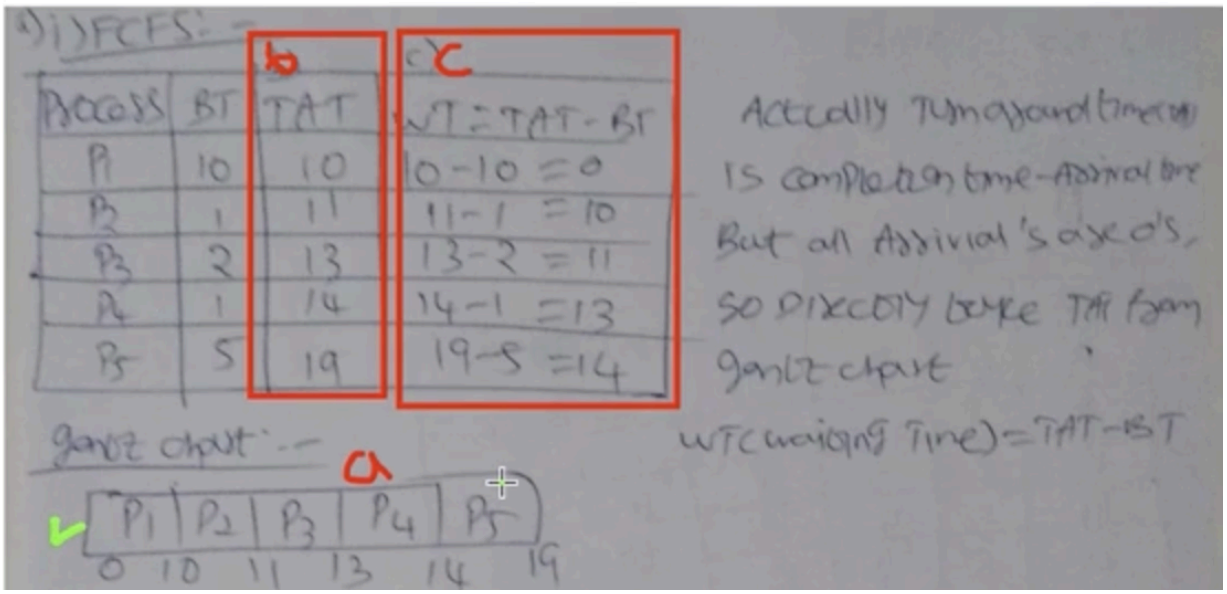
Q 1: Consider the following set of processes, with the length of the CPU burst given in milliseconds:

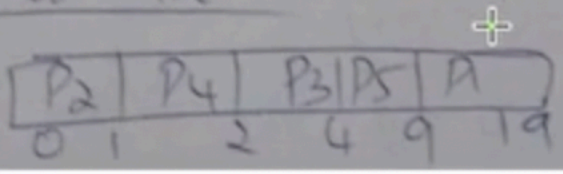
Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2



ii) SJF:- b) c)

Process	BT	TAT	WT = TAT - BT
P_1	10	19	19-10=9
P_2	1	1	1-1=0
P_3	2	4	4-2=2
P_4	1	2	2-1=1
P_5	5	9	9-5=4

Gantt chart:-

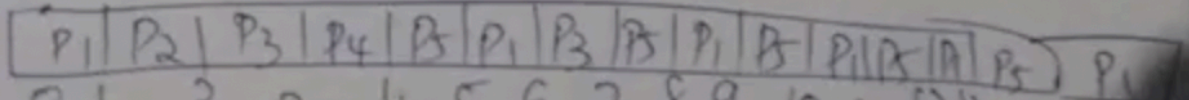


iv) RR TQ = 1) -

b) c)

Process	BT	TAT	WT = TAT - BT
P1	10	19	19 - 10 = 9
P2	1	2	2 - 1 = 1
P3	2	7	7 - 2 = 5
P4	1	4	4 - 1 = 3
P5	5	14	14 - 5 = 9

Gantt Chart:



d) i) FCFS Avg WT = $\frac{0+10+11+13+14}{5} = \frac{48}{5} = 9.6$

ii) SJF Avg WT = $\frac{9+0+2+1+4}{5} = \frac{16}{5} = 3.2$

iii) Non Pre Priority Avg WT = $\frac{6+0+16+18+1}{5} = \frac{41}{5} = 8.2$

iv) RR Avg WT = $\frac{9+1+5+3+9}{5} = \frac{27}{5} = 5.4$

Among them SJF have minimal Avg waiting Time

SJF is best

Process	Arrival Time	burst Time
P1	0.0	8
P2	0.4	4
P3	1.0	1

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P1	0.0	8
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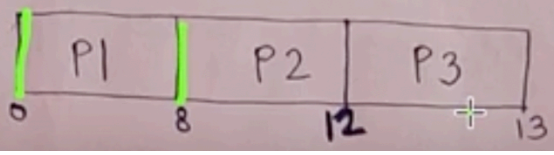
P3	1.0	1

a] Using FCFS finding the average turnaround time.

Since, FCFS is non pre-emptive scheduling

Gantt Chart :-



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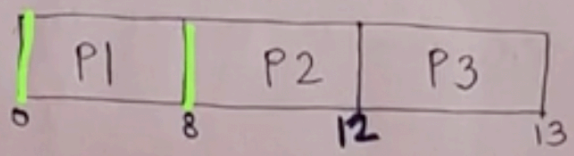
Gantt Chart :-



Process	AT (Arrival Time)	BT (Burst time)	CT (Calculation time)	TAT (Turn around time) (CT − AT)
P1	0.0	8	8	(8 − 0.0) = 8
P2	0.4	4	12	(12 − 0.4) = 11.6
P3	1.0	1	13	(13 − 1) = 12

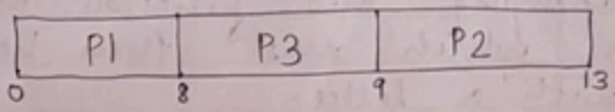
Average Turnaround time $= \frac{8 + 11.6 + 12}{3}$

$= 10.53$

Process	Arrival Time	burst time
P1	0.0	8
P2	0.4	4
P3	1.0	1

b] Using SJF scheduling, finding the average turnaround time.
Since SJFS is non preemptive scheduling.

Gantt Chart :



Process	AT (Arrival Time)	BT (Burst Time)	C.T (Calculated Time)	TAT (Turn around time) CT − AT
P1	0.0	8	8	(8 − 0.0) = 8
P2	0.4	4	13	(13 − 0.4) = 12.6
P3	1.0	1	9	(9 − 1) = 8

Average Turnaround Time $= \frac{8 + 12.6 + 8}{3}$

$= \underline{\underline{9.53}}$