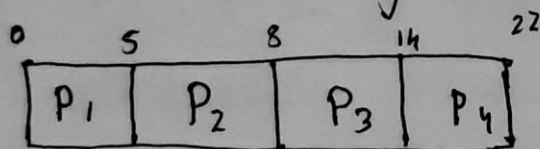


1)

<u>Process ID</u>	<u>Arrival time</u>	<u>Burst time</u>
P <sub>1</sub>	0	5
P <sub>2</sub>	1	3
P <sub>3</sub>	2	8
P <sub>4</sub>	3	6

i) FCFS Scheduling



$$\text{Turn around time} = \text{Completion time} - \text{Arrival time}$$

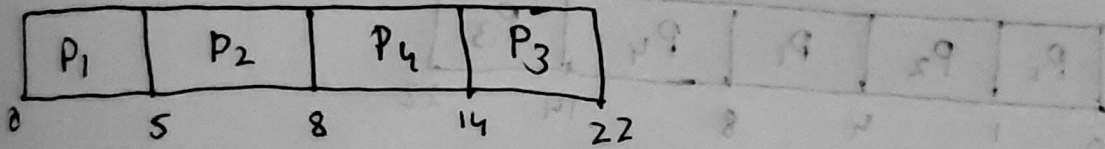
$$\text{Waiting time} = \text{Turnaround time} - \text{Burst time}$$

<u>Process ID</u>	<u>Completion Time</u>	<u>Turnaround Time</u>	<u>Waiting Time</u>
P <sub>1</sub>	5	5 - 0 = 5	5 - 5 = 0
P <sub>2</sub>	8	8 - 1 = 7	7 - 3 = 4
P <sub>3</sub>	16	16 - 2 = 14	14 - 8 = 6
P <sub>4</sub>	22	22 - 3 = 19	19 - 6 = 13

Aug. Turn around time =  $45/4$   
 =  $11.25$  units

Aug. waiting time =  $23/4$   
 =  $5.75$  units

a) Non preemptive SJF :



Processor ID	Completion time	Turn around time	Waiting time
P <sub>1</sub>	5	5 - 0 = 5	5 - 5 = 0
P <sub>2</sub>	8	8 - 1 = 7	7 - 3 = 4
P <sub>3</sub>	22	22 - 2 = 20	20 - 8 = 12
P <sub>4</sub>	14	14 - 3 = 11	11 - 6 = 5

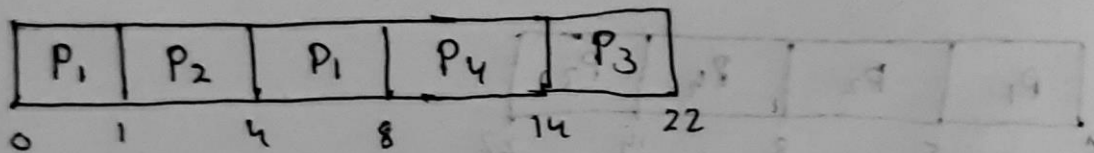
Avg. Turn around time =  $43/4$

= 10.75 units

Avg. waiting time =  $21/4$

= 5.25 units

3) Preemptive STF



Process ID	AT	BT	RT	CT	TAT	WT
P <sub>1</sub>	0	5	4	8	8-0=8	8-5=3
P <sub>2</sub>	1	3	0	4	4-1=3	3-3=0
P <sub>3</sub>	2	8	0	22	22-2=20	20-8=12
P <sub>4</sub>	3	6	0	14	14-3=11	11-6=5

Avg Turn around time =  $42/4 = 10.2$  units

Avg waiting time =  $20/4 = 5$  units