# OS ASSIGNMENT - CO1

With suitable diagrams explain the working of the following CPU scheduling algorithms:
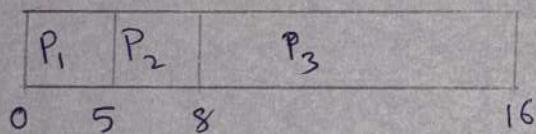
1) **FCFS (First Come First Serve):-** Non-preemptive.

→ The process that arives first in the ready queue is executed first. It's just like a queue at a ticket counter.

Eg:-

| Process | Burst time |
|---------|------------|
| $P_1$   | 5          |
| $P_2$   | 3          |
| $P_3$   | 8          |

Gantt chart:

| $P_1$ | $P_2$ | $P_3$ |
|-------|-------|-------|
| 0     5     8        16 |
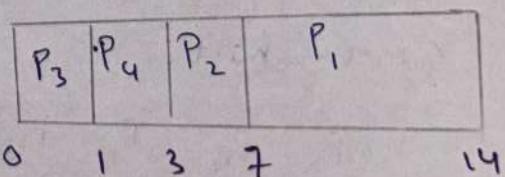
2) ~~SJF~~

2) **SJF (Shortest Job First):-**

→ The process with the smallest burst time is executed first. It can be non-preemptive or preemptive (SRTF).

Eg:-

| Process | Burst time |
|---------|------------|
| $P_1$   | 7          |
| $P_2$   | 4          |
| $P_3$   | 1          |
| $P_4$   | 2          |

Gantt chart:

| $P_3$ | $P_4$ | $P_2$ | $P_1$ |
|-------|-------|-------|-------|
| 0     1     3     7        14 |

## 3) RR (Round Robin):- preemptive
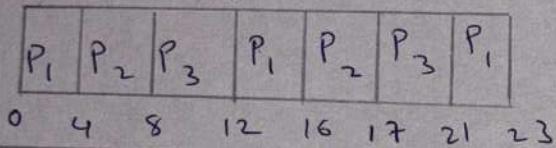
→ Each process gets a fixed time slice (quantum), and process
-es are scheduled in cyclic order.

Eg:- Time quantum : 4

| Process | Burst time |
|---------|-----------|
| $P_1$ | 8 |
| $P_2$ | 5 |
| $P_3$ | 10 |

Gantt chart:

| $P_1$ | $P_2$ | $P_3$ | $P_1$ | $P_2$ | $P_3$ | $P_1$ |
|-------|-------|-------|-------|-------|-------|-------|

0    4    8    12   16   17   21   23

## 4) Priority scheduling:-

→ Each process is assigned a priority number, and the CPU is given
to the highest priority process (smallest number = highest priority).
Can be preemptive or Non-preemptive.

Eg:- Non-preemptive :

| Process | Burst time | priority |
|---------|-----------|----------|
| $P_1$ | 10 | 3 |
| $P_2$ | 1 | 1 |
| $P_3$ | 2 | 4 |
| $P_4$ | 1 | 2 |

Gantt chart:

| $P_2$ | $P_4$ | $P_1$ | $P_3$ |
|-------|-------|-------|-------|

0    1    2    12   24