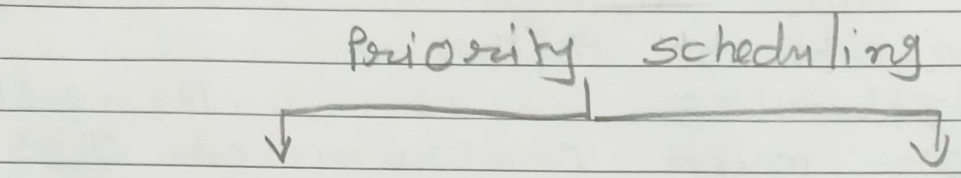
→ Priority scheduling.



- The waiting time for the Process having the highest priority will always be zero in Pre-emptive mode.
- The waiting time for the ~~highest~~ Process having the highest priority may not be zero in non-Preemptive mode.

✱ Priority Based non-Preemptive method.

Process	AT	BT	Priority
P1	0	4	2 (L)
P2	1	3	3
P3	2	1	4.
P4	3	5	5. (H)
P5	4	2	5

if the CPU Scheduling Policy is Priority non-Preemptive, calculate the average waiting time and average turn Around time

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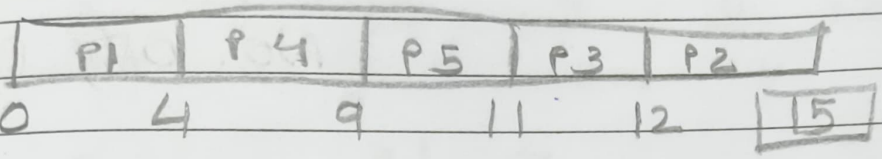
Step-1

→ Gantt chart



Step-2

Turn Around time = PC − AT

waiting time = TT − BT

Process	PC	TT = PC − AT	WT = TT − BT
P1	4	4 − 0 = 4	4 − 4 = 0
P2	15	15 − 1 = 14	14 − 3 = 11
P3	12	12 − 2 = 10	10 − 1 = 9
P4	9	9 − 3 = 6	6 − 5 = 1
P5	11	11 − 4 = 7	7 − 2 = 5

Step-3

Average of Turn Around time

$$A.TT = \frac{4+14+10+6+7}{5}$$

$$= \frac{41}{5} = 8.2$$

Step-4

Average of waiting time.

$$A.WT = \frac{0+11+9+1+5}{5}$$

$$= \frac{26}{5}$$

$$= 5.2$$

Step 5

Throughput = Estimated time / No. of Process

$$= \frac{15}{5} = 3$$

Step 6

Processor Utilization = (Estimated time / Estimated time) * 100

$$= \frac{15}{15} * 100$$

$$= 100\%$$

* Priority Based Pre-emptive Algorithm.

Process	AT	BT	Priority
P1	0	~~4~~ 3	2
P2	1.	~~3~~ 2	3
P3	2	~~1~~ 0	4
P4	3	~~5~~ 0	5
P5	4	~~2~~ 0	5

if the CPU scheduling Policy is Priority Preemptive, calculate the average waiting time & average turn Around time (higher number represents higher Priority).

[જે higher Priority હશે તો Puri Process પત થશે)

- એક વાર Priority set થઈ જાય પછી non-Preemptive ના work કરે.
- clockwise

 L=1, H=10

Step-1 G chart

P1	P2	P3	P4	P5	P2	P1

0 1 2 3 8 10 12 15

Step-2

Turn Around time = PC - AT

waiting time = TT - BT

Process	Process Complete	TT = PC - AT	WT = TT - BT
P1	15	15-0 = 15	15-4 = 11
P2	12	12-1 = 11	11-3 = 8
P3	3	3-2 = 1	1-1 = 0
P4	8	8-3 = 5	5-5 = 0
P5	10	10-4 = 6	6-2 = 4

Step-3 $A.TT = \frac{15+11+1+5+6}{5} = \frac{38}{5} = 7.6$

Step-4 $A.WT = \frac{11+8+0+0+4}{5} = \frac{23}{5} = 4.6$

Step-5 $\text{Throughput} = \frac{\text{Estimated time}}{\text{No. of process}}$

$= \frac{15}{5} = 3$

Step-6 $\text{Processor Utilization} = \frac{ET}{ET} * 100$

$= \frac{15}{15} * 100 = 100\%$