Assignment - 2 (O.S)

Part - E

1.

Process	A.T	B.T
P1	0	15
P2	1	3
P3	2	6

Calculate FCFS

→ gantt chart

P1	P2	P3
0	5	8	14

Waiting Time

P1 = 0 - 0 = 0
P2 = 5 - 1 = 4
P3 = 8 - 2 = 6

Avg waiting time = $\frac{0+4+6}{3}$

$= \frac{10}{3}$

$= 3.33$ ms

2) SJF

given process	A.T	B.T
P1	0	3
P2	1	5
P3	2	1
P4	3	4

→ gantt chart

P1	P3	P4	P2
0	3	4	8	13

TAT → (Turn Around Time)

P1 = 3-0 = 3
P2 = 13-1 = 12
P3 = 4-2 = 2
P4 = 8-3 = 5

Avg TAT = $\frac{3+12+2+5}{4}$

$= \frac{22}{4}$

$= 5.5$ ms

3) : priority Scheduling (non-preemp)

given process	A.T	B.T	priority
P1	0	6	3
P2	1	4	1
P3	2	7	4
P4	3	2	2

gantt ~~chartt~~ chart

P2	P4	P1	P3
1	5	7	13	20

waiting time (W.T)

P2 = 1 - 1 = 0
P4 = 5 - 3 = 2
P1 = 7 - 0 = 7
P3 = 13 - 2 = 11

Avg waiting time = $\frac{0+2+7+11}{4}$

$= \frac{20}{4}$

= 5 ms.

4) Robin Round (quantum = 2):

given process	A.T	B.T
P1	0	4
P2	1	5
P3	2	2
P4	3	3

gantt Chart

P1	P2	P3	P4	P1	P2	P4	P2
0	2	4	6	8	10	11	13

TAT = P1 = 10 - 0 = 10

P2 = 15 - 1 = 14

P3 = 6 - 2 = 4

P4 = 11 - 3 = 8

$$\text{Avg TAT} = \frac{10 + 14 + 4 + 8}{4}$$

$$= \frac{36}{4}$$

$$= 9 \text{ ms.}$$

Page No.
Date

5) Fork System Call E.g

problem :

- parent process $x = 5$
- After fork(), both parent & child increment x by 1

Output :

- parent $x = 6$
- child $x = 6$

Parent & child have separate memory spaces.