Assignment-2

Q.1) Consider following process with arrival time and burst times.

Process	Arrival time	Burst Time
P1	0	5
P2	1	3
P3	2	6

Sol^n = Gantt chart:-

P1	P2	P3

0   5   8   14
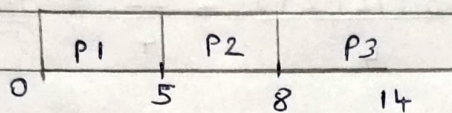
Process	Arrival	Burst	Wait Time	TAT
P1	0	5	0	5
P2	1	3	4	7
P3	2	6	6	12

$$\text{Avg wait Time} = \frac{P1 + P2 + P3}{3} = \frac{0+4+6}{3} = \frac{10}{3} = 3.33$$

Q.2)

Process	Arrival Time	Burst Time
P1	0	3
P2	1	5
P3	2	1
P4	3	4

Calculate Average TAT using SJF Algorithm

→ Gantt chart:-

P1	P3	P4	P2

0   3   4   8   13
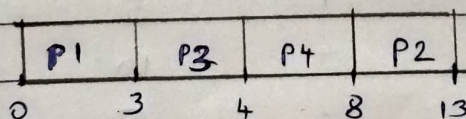
PID	Arrival	Burst	CT	wait	TAT
P1	0	3	3	0	3
P2	1	5	13	12	12
P3	2	1	4	2	2
P4	3	4	8	5	5

$$\text{Avg TAT} = \frac{3+17+3+9}{4} = \frac{32}{4} = \cancel{}$$

$$= \frac{3+12+2+5}{4} = \frac{22}{4} = \underline{5.5 \text{ units}}$$

Q-3)

Process	Arrival	Burst	Priority
P1	0	6	3
P2	1	4	1
P3	2	7	4
P4	3	2	2

Find avg wait Time Using Priority sheduling
(lower number, high priority)

→ Gantt chart :-

P1	P2	P4	P3
0 6 10   12   19
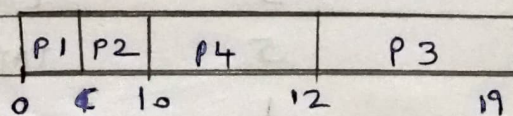
Process	Arrival	Burst	Priority	W·T
P1	0	65	3	0
P2	1	4	1	5
P3	2	7	4	10
P4	3	2	2	7

$$\text{Avg} = \frac{0+5+10+7}{4} = \boxed{5.5}$$

Q.4)

Process	Arrival	Burst
P1	0	4
P2	1	5
P3	2	2
P4	3	3

Round Robin sheduling is 2 units:
find avg TAT using Round-Robin

→

Process	Arrival	Burst	Completion Time	TAT
P1	0	4̶ ̶2̶	10	10
P2	1	5̶ 3̶ 1	14	13
P3	2	2̶	6	4
P4	3	3̶ 1	13	10

P1	P2	P3	P4	P1	P2	P4	P2
0	2	4	6	8	10	12	13	14
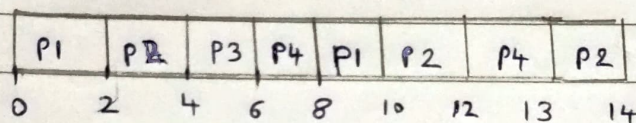
$$\text{Average TAT} = \frac{10+13+4+10}{4} = \frac{37}{4} = 9.25 \text{ units}$$

Q.5) a program uses fork() call to create a child process. Initially, the parent process has a variable x with value 0. After forking, both parent & child incrementt by 1 what is final value of x in parent & child after fork()?

→ In Parent Process, final value is 6
Child process, final value is 6