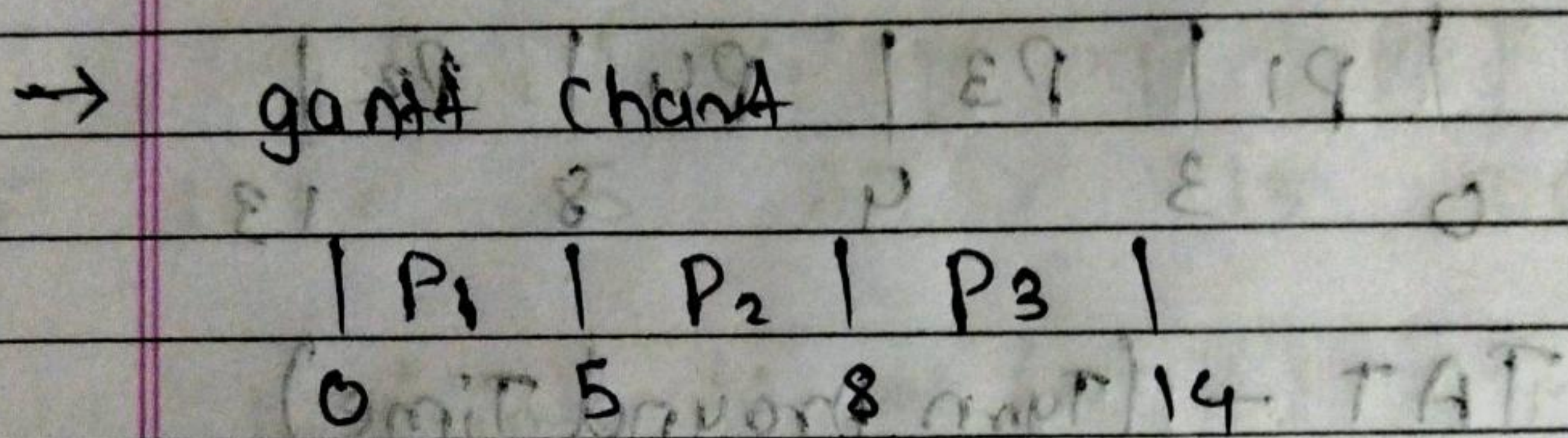


Assignment - 2 (O.S)

Part - E

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

Calculate FCFS



$$\text{Waiting Time} = 0 - 0 = 0$$

$$P1 = 0 - 0 = 0$$

$$P2 = 5 - 1 = 4$$

$$P3 = 8 - 2 = 6$$

$$2 + 4 + 6 = \text{TAT}$$

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

$$= \frac{10}{3}$$

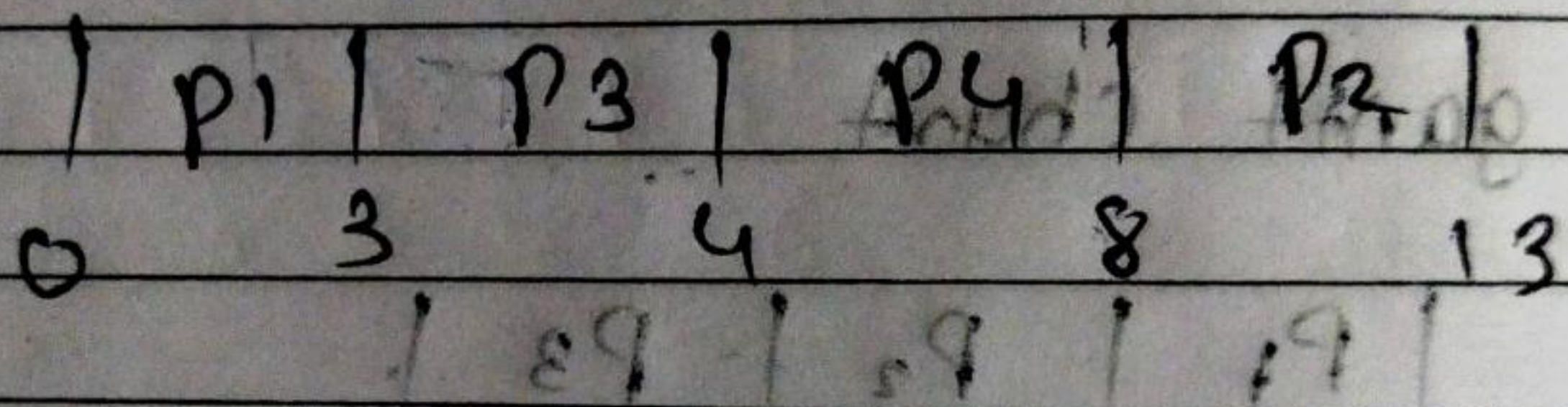
$$= 3.33 \text{ ms}$$

2)

STF

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

→ gantt chart



TAT → (Turn Around Time)

$$P1 = 3 - 0 = 3$$

$$P2 = 13 - 1 = 12$$

$$P3 = 4 - 2 = 2$$

$$P4 = 8 - 3 = 5$$

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

$$= \frac{22}{4}$$

$$= 5.5 \text{ ms}$$

3) priority Scheduling (non-premp)

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

gantt chart

P2	P4	P1	P3
5	7	13	20

waiting time (WT)

$$P2 = 1 - 1 = 0$$

$$P4 = 5 - 3 = 2$$

$$P1 = 7 - 0 = 7$$

$$P3 = 13 - 2 = 11$$

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

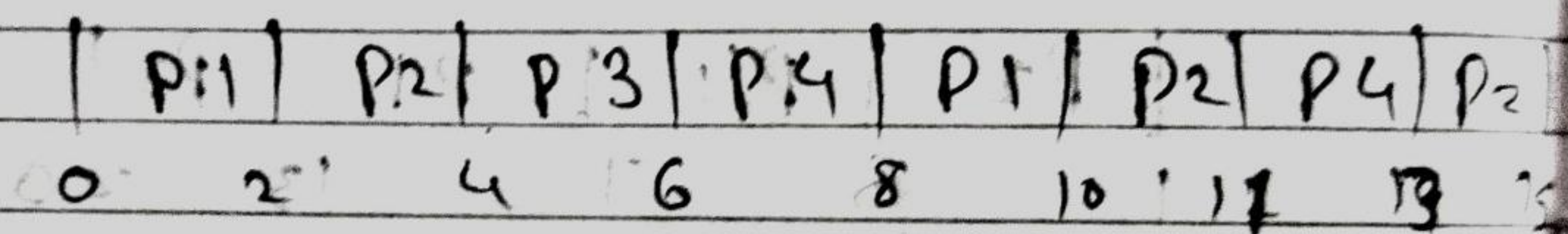
$$= \frac{20}{4}$$

$$= 5 \text{ ms}$$

4) Robin Round (quantum = 2)

given process	A.T	B.T
P1	9	4
P2	5	5
P3	2	2
P4	3	3

gantt chart



$$TAT = P1 = 10 - 0 = 10$$

$$P2 = 15 - 1 = 14$$

$$P3 = 6 - 2 = 4$$

$$P4 = 11 - 3 = 8$$

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

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

$$= 9 \text{ ms}$$

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.