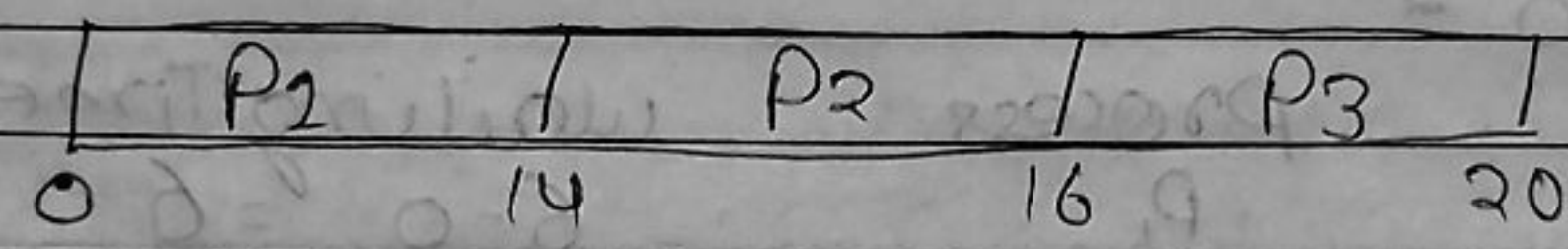
OS

Q Consider the following set of process that arrives at a time 0, with the length of CPU Burst given in milli second

I → Calc the Average time

SNO	Process	Burst time
1	P_1	14
2	P_2	2
3	P_3	4

→ step 1: Draw GANTT CHART



Step-2

Process	waiting Time
P1	0-0 = 0
P2	14-0 = 14
P3	16-0 = 16

Step 3 formula Avg waiting Time

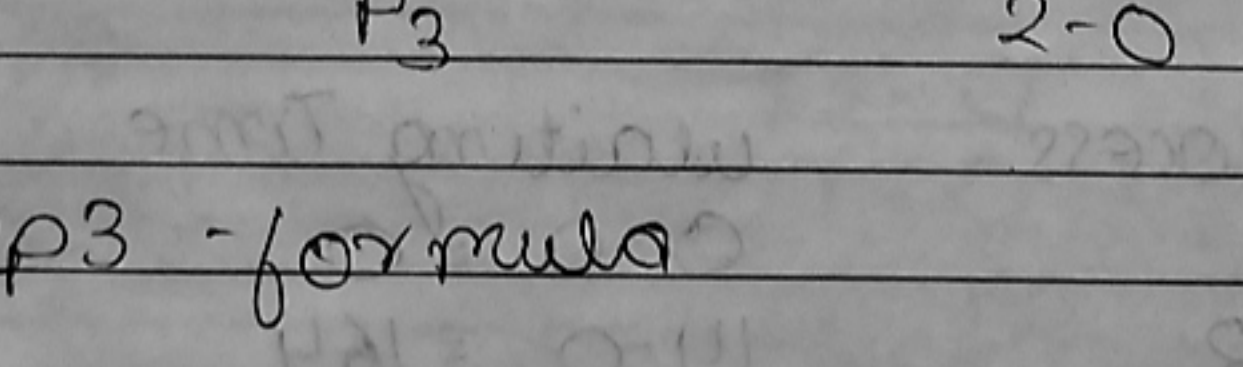
AWT = $\frac{\text{Sum of All waiting Time}}{\text{Total no of processes}}$

$= \frac{0+14+16}{3} = \frac{30}{3}$ = 10 milli sec

(02) If process arriving order P_2, P_3, P_1 then the result will be as Below

Process	Burst time
P_1	14
P_2	2
P3	4

→ Step 1- GANTT CHART



Step 2-

process	waiting Time
P_1	6-0 = 6
P_2	0-0 = 0
P_3	2-0 = 2

step3 - formula

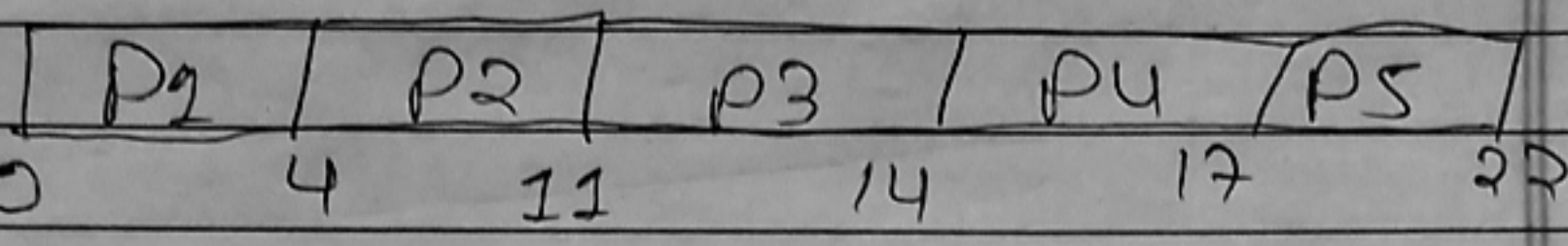
$$AWT = \frac{\text{Sum of all waiting time}}{\text{Total no of process}}$$

$$= \frac{6+0+2}{3} = \frac{8}{3} = 2.666 \text{ millisec}$$

Q3

Process	Burst Time
P1	4
P2	7
P3	3
P4	3
P5	5

→ step 1 - Draw GANTT CHART



Step-2 waiting Time

Process	waiting Time
P1	0 - 0 = 0
P2	4 - 0 = 4
P3	11 - 0 = 11
P4	14 - 0 = 14
P5	17 - 0 = 17

Step 3- formula

$$AWT = \frac{0+4+11+14+17}{5} = \frac{46}{5} = 9.2 \text{ Millisec}$$

Turn Around Time formula (TAT)

TAT = waiting Time + Burst Time

Process	TAT
P1	0+4=4
P2	4+7=11
P3	11+3=14
P4	14+3=17
P5	17+5=22

$$TAT = \frac{4+11+14+17+22}{5}$$

$$= \frac{68}{5} = 13.60 \text{ Milli sec}$$