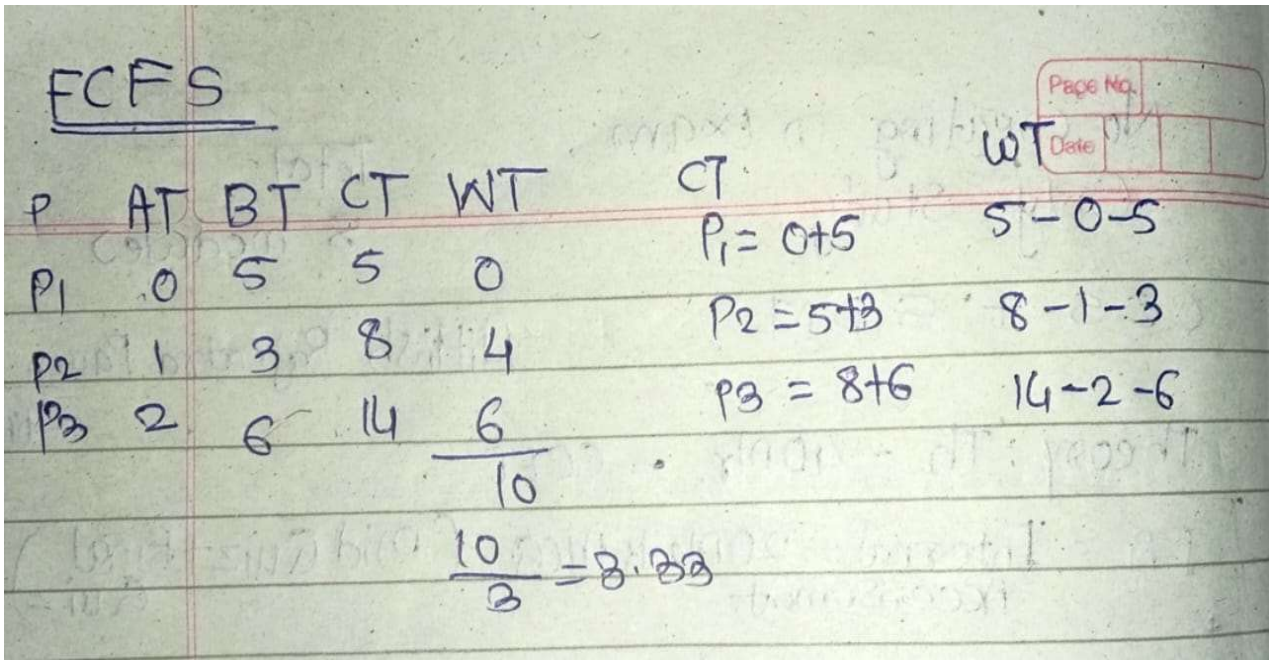
PART E Assignment OS 2

Saturday, March 1, 2025 10:17 PM

1.Consider the following processes with arrival times and burst times
:

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

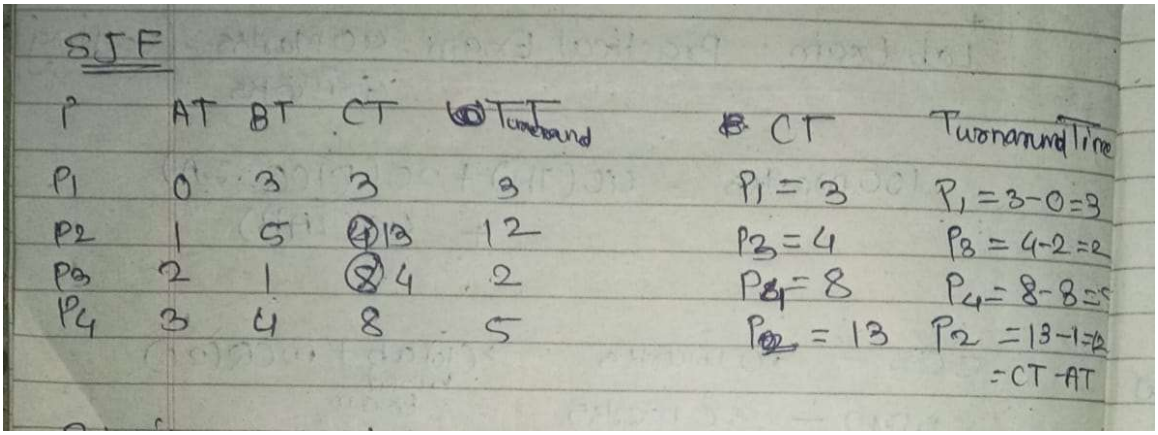
Calculate the average waiting time using First-Come, First-Served (FCFS) scheduling.



2. Consider the following processes with arrival times and burst times:

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

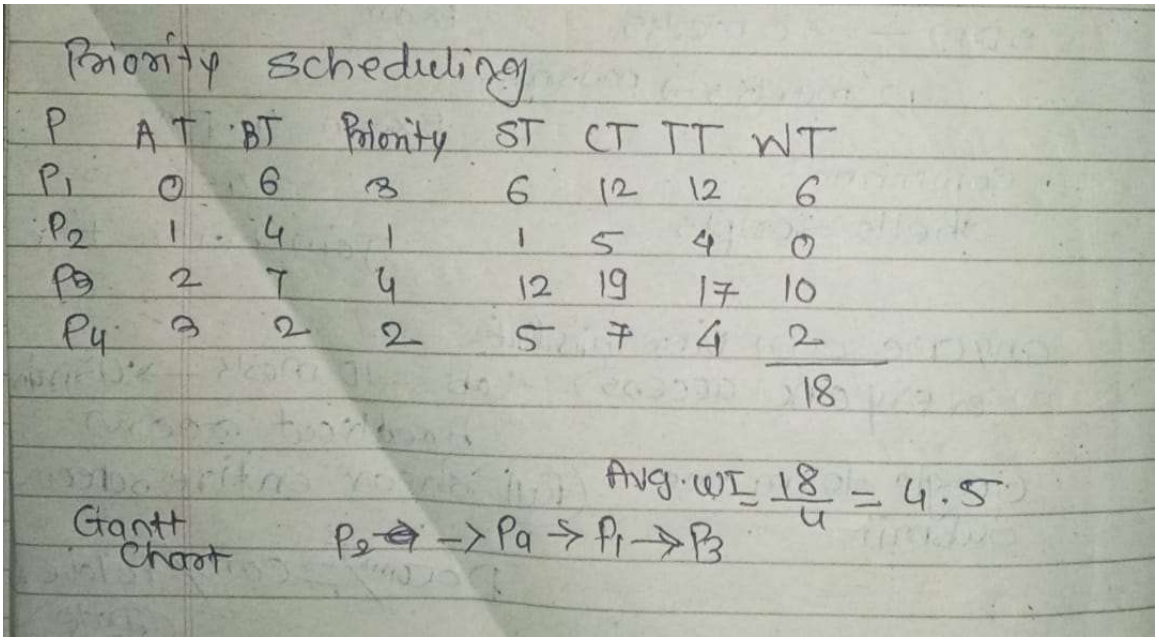
Calculate the average turnaround time using Shortest Job First (SJF) scheduling.



3. Consider the following processes with arrival times, burst times, and priorities (lower number indicates higher priority):

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

Calculate the average waiting time using Priority Scheduling.



Priority scheduling

P	AT	BT	Priority	ST	CT	TT	WT
P_1	0	6	3	6	12	12	6
P_2	1	4	1	1	5	4	0
P_3	2	7	4	12	19	17	10
P_4	3	2	2	5	7	4	2
							18

Avg. WT = $\frac{18}{4} = 4.5$

Gantt Chart $P_2 \rightarrow P_4 \rightarrow P_1 \rightarrow P_3$

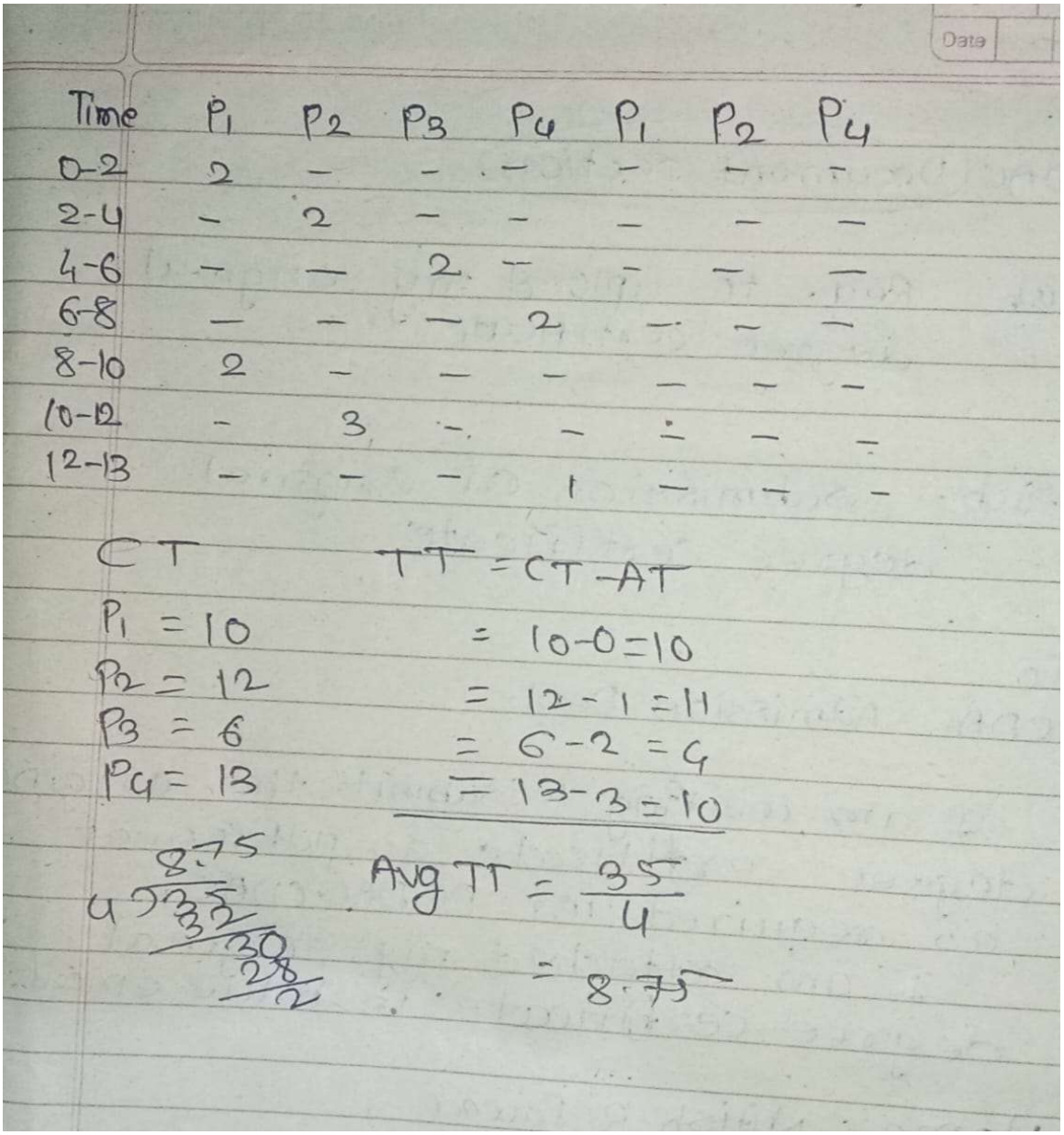
4.Consider the following processes with arrival times and burst times, and the time quantum for Round Robin scheduling is 2 units:

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

Calculate the average turnaround time using Round Robin scheduling.

P4	3	3

Calculate the average turnaround time using Round Robin scheduling.



Time	P_1	P_2	P_3	P_4	P_1	P_2	P_4
0-2	2	-	-	-	-	-	-
2-4	-	2	-	-	-	-	-
4-6	-	-	2	-	-	-	-
6-8	-	-	-	2	-	-	-
8-10	2	-	-	-	-	-	-
10-12	-	3	-	-	-	-	-
12-13	-	-	-	1	-	-	-

CT

$P_1 = 10$

$P_2 = 12$

$P_3 = 6$

$P_4 = 13$

$TT = CT - AT$

$= 10 - 0 = 10$

$= 12 - 1 = 11$

$= 6 - 2 = 4$

$= 13 - 3 = 10$

$$\text{Avg TT} = \frac{35}{4}$$

$$= 8.75$$

$$4 \overline{)35} \quad 8.75$$

32

30

28

2