Quiz-3

180041120
Md Farhan Ishmam

① $\tau_n = \alpha \times t_n + (1-\alpha)\tau_{n-1}$; $\alpha = 0.5$

Given, $\tau_0 = 120$ (last 3 digits of ID)

$\tau_1 = 0.5 \times 6 + (1-0.5) \times 120 = \lceil 63 \rceil = 63$

$\tau_2 = 0.5 \times 4 + (1-0.5) \times 63 = \lceil 33.5 \rceil = 34$

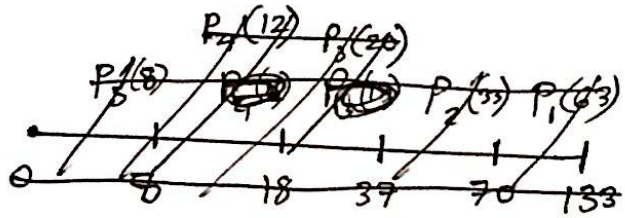
$\tau_3 = 0.5 \times 5 + (1-0.5) \times 34 = \lceil 19.5 \rceil = 20$

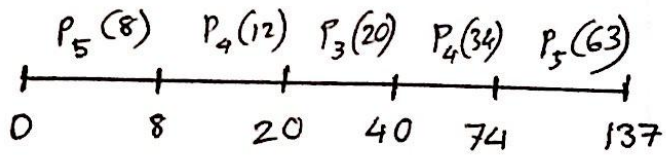
$\tau_4 = 0.5 \times 3 + (1-0.5) \times 20 = \lceil 11.5 \rceil = 12$

$\tau_5 = 0.5 \times 3 + (1-0.5) \times 12 = \lceil 7.5 \rceil = 8$

② (a) Shortest Job First

	Arrival time	Burst Time
P_1	0	63
P_2	0	34
P_3	0	20
P_4	0	12
P_5	0	8





1800411120
Md Farhan Rahman

Waiting time =

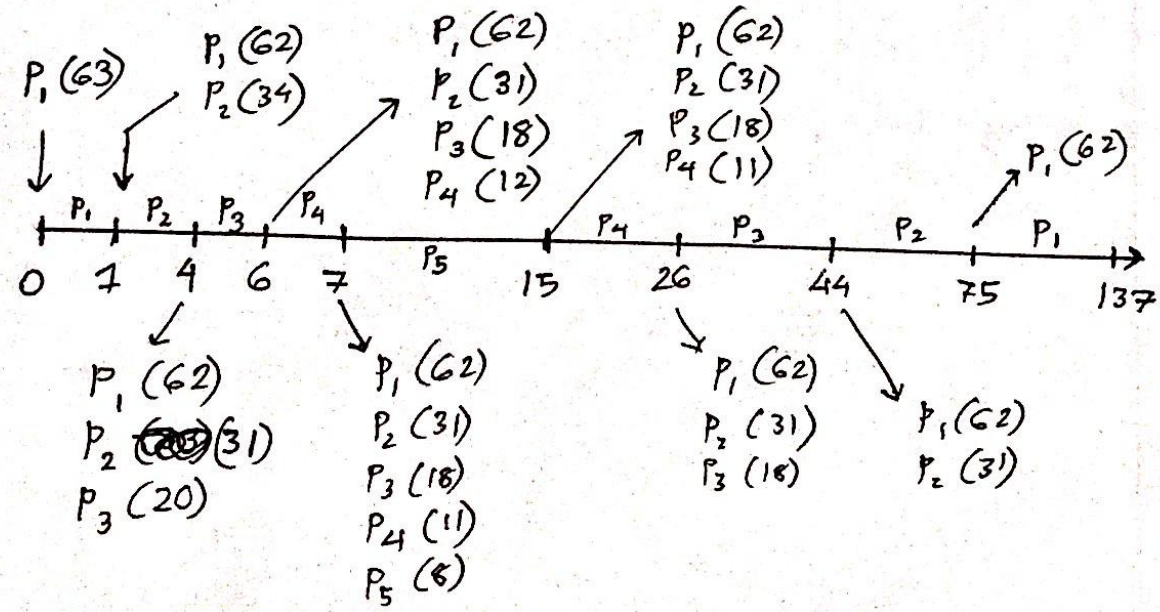
$P_1 = (74-0) = 74$
$P_2 = (40-0) = 40$
$P_3 = (20-0) = 20$
$P_4 = (8-0) = 8$
$P_5 = (0-0) = 0$

$$\text{Average} = \frac{74+40+20+8+0}{5}$$

$$= 28.4 \text{ mS (Ans.)}$$

(b)

	Arrival Time	Burst time
P_1	0	63
P_2	1	34
P_3	4	20
P_4	6	12
P_5	7	8



18 0041120
Md. Fashan Rahman

Waiting time =

$P_1 = (0-0) + (75-1) = 74$

$P_2 = (1-1) + (44-4) = 40$

$P_3 = (4-4) + (26-6) = 20$

$P_4 = (6-6) + (15-7) = 8$

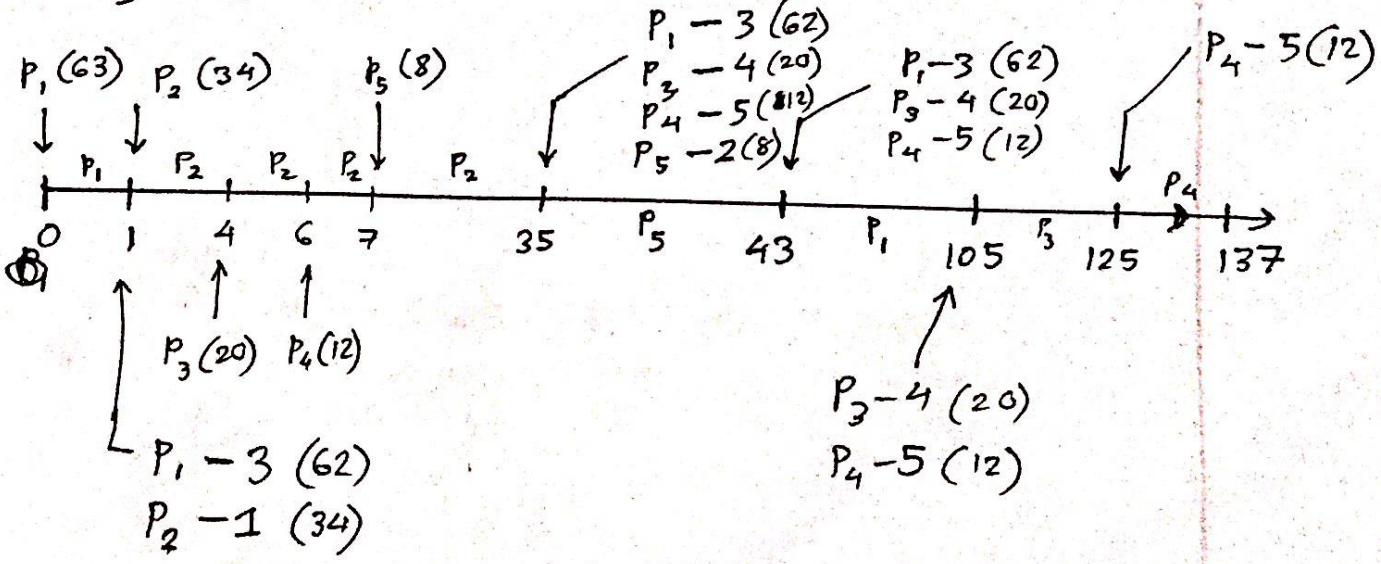
$P_5 = (7-7) = 0$

$$\text{Average} = \frac{74+40+20+8+0}{5}$$

$$= 28.4 \text{ (Ans.)}$$

(c)

	Arrival Time	Burst Time	Priority
P_1	0	63	3
P_2	1	34	1
P_3	4	20	4
P_4	6	12	5
P_5	7	8	2



180041120
Md Farhan Ishmam

Average Waiting Time,

$P_1 = (0-0) + (43-1) = 42$

$P_2 = (1-1) = 0$

$P_3 = (105-4) = 101$

$P_4 = (125-6) = 119$

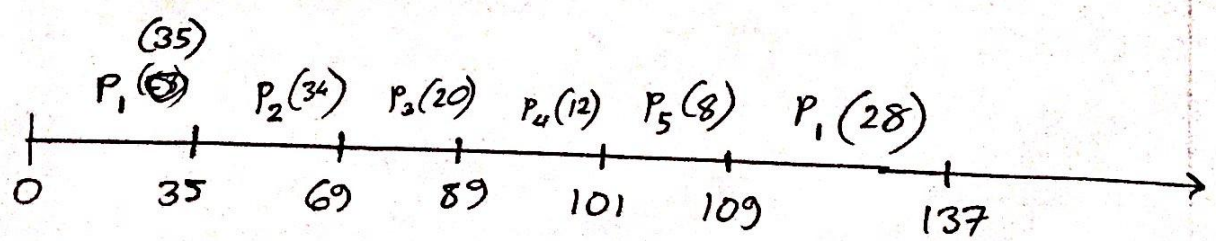
$P_5 = (35-7) = 28$

$$\text{Average} = \frac{42+0+101+119+28}{5}$$

$$= 145 \text{ ms (Ans.)}$$

(d) $Q = 0.5 \times 63 + 0.5 \times 6 = \lceil 34.5 \rceil = 35$

	Arrival	Burst
P_1	0	63
P_2	0	34
P_3	0	20
P_4	0	12
P_5	0	8



18004120
Md. Fahim Ishraam

~~Average~~ Waiting Time,

$P_1 = (0-0) + (109-35) = 74$
$P_2 = (35-0) = 35$
$P_3 = (69-0) = 69$
$P_4 = (89-0) = 89$
$P_5 = (101-0) = 101$

$$\text{Avg.} = \frac{74+35+69+89+101}{5}$$

$$\text{Avg. Waiting time} = \frac{368}{5}$$

$$= 73.6 \text{ (Ans.)}$$