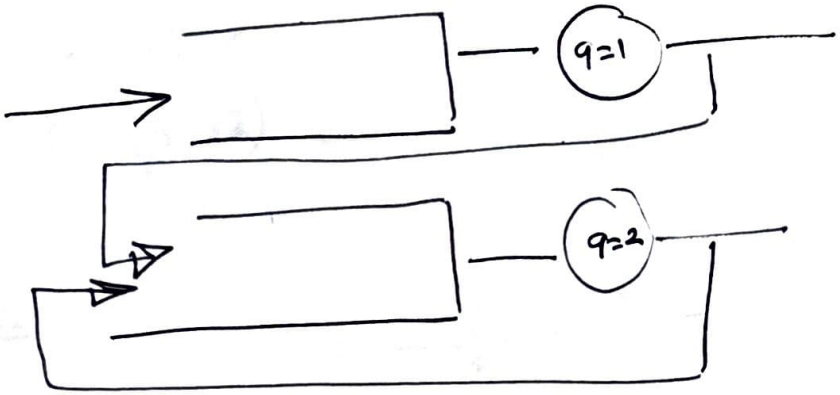
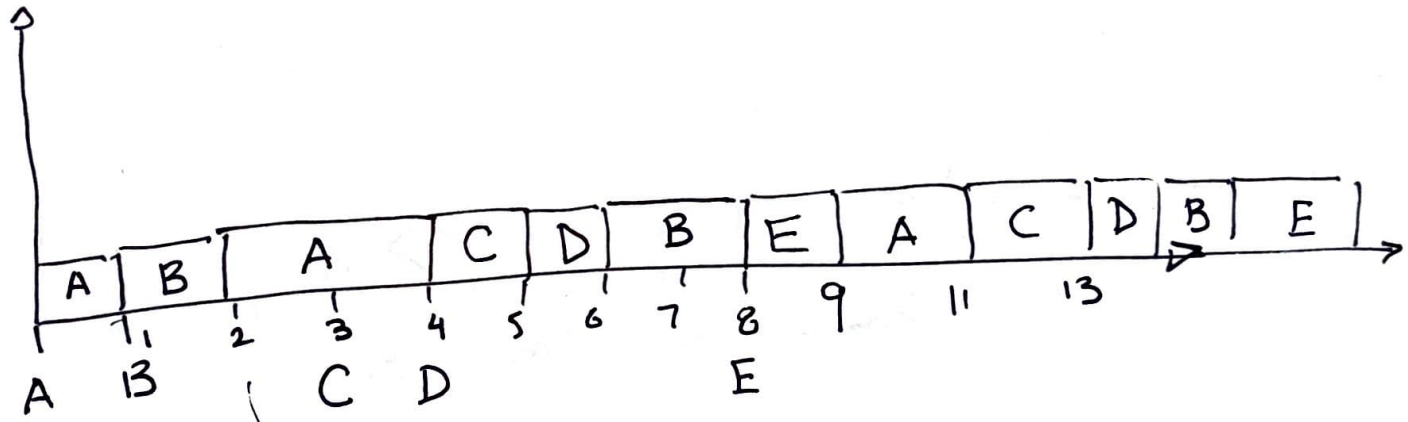
HW#2 P1

(9)





@1
Q1 B_1
Q2 A_4

@2
$B_3 A_4$

@4
$D_2 C_3$
$A_2 B_3$

@5
D_2
$C_2 A_2 B_3$

@6
$D_1 C_2 A_2 B_3$

@8
$E_2 B_1 D_1 C_2 A_2$

@9

Hw#2 P3 (d)

A (2,6)
B (2,8)
C (3,12)

(a) RMS

$$\frac{2}{6} + \frac{2}{8} + \frac{3}{12} = X < 1$$

$$n\left(2^{1/n} - 1\right)$$

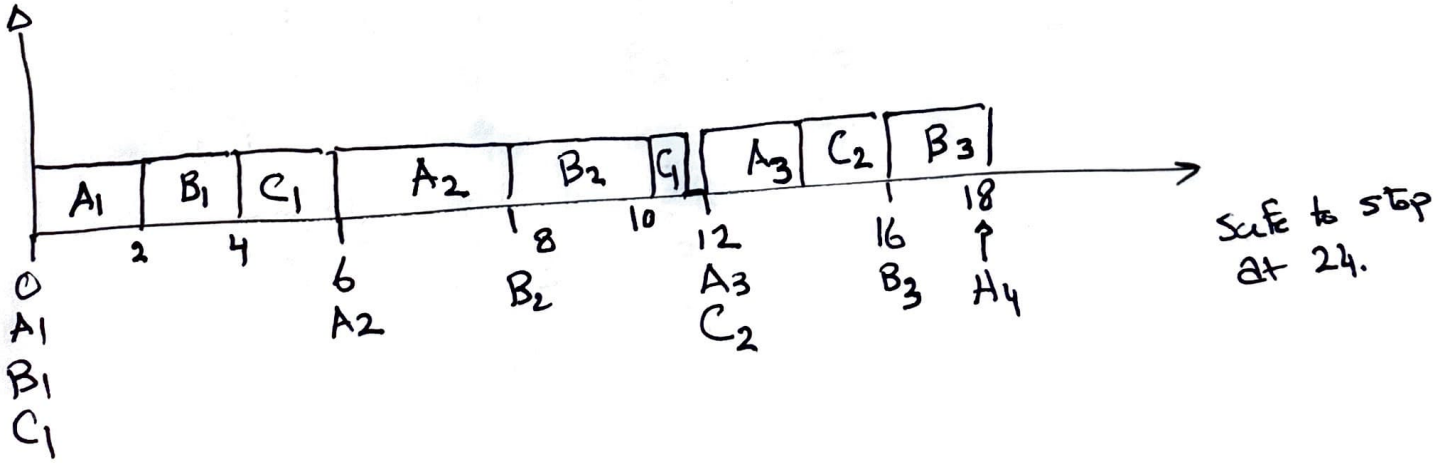
$$3\left(2^{1/3} - 1\right) = Y$$

If $X < Y$

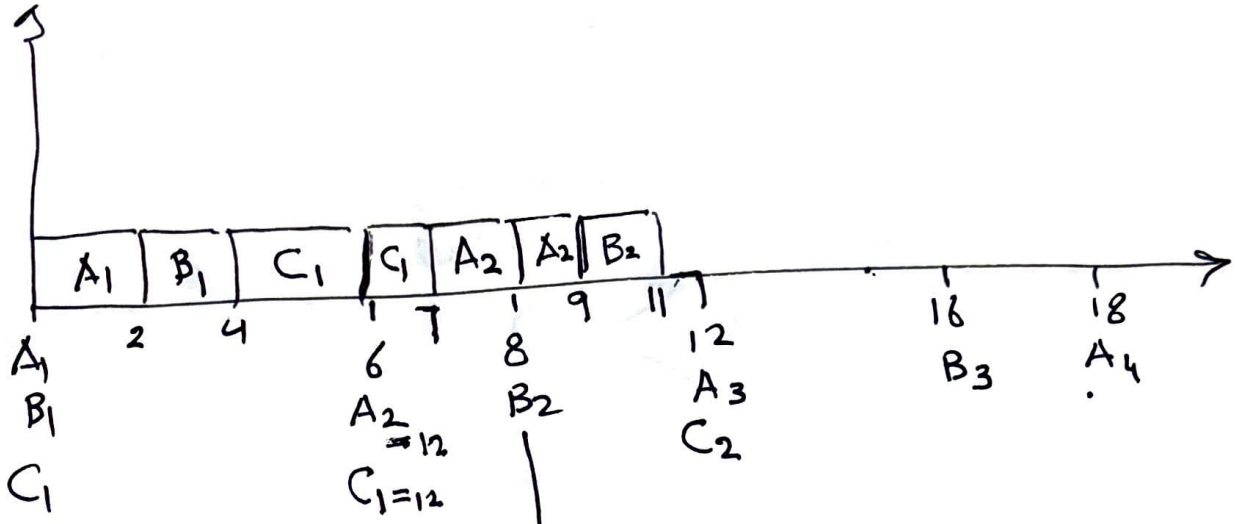
$\Rightarrow$ guarantee meeting deadline

else

we don't know $\Rightarrow$ Try.



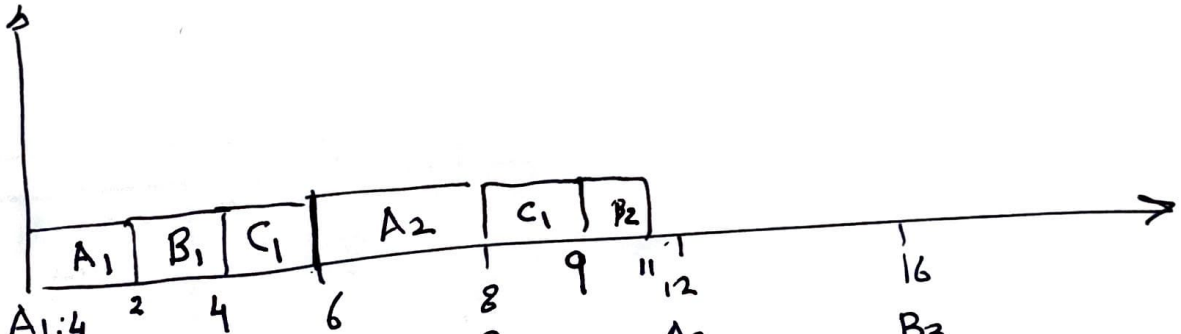
EDF



B2 : 16
A2 : 12

@9

LSPN



B1 : 4
C1 : 7

@6
C1 : 5
A2 : 4

@8
B2 : 6
C1 : 3

EWMA

$$T_{n+1} = \alpha T_n + (1-\alpha) M_n$$

T_n: history

M_n: Last measurment.

α: weight

$$0 < \alpha < 1$$

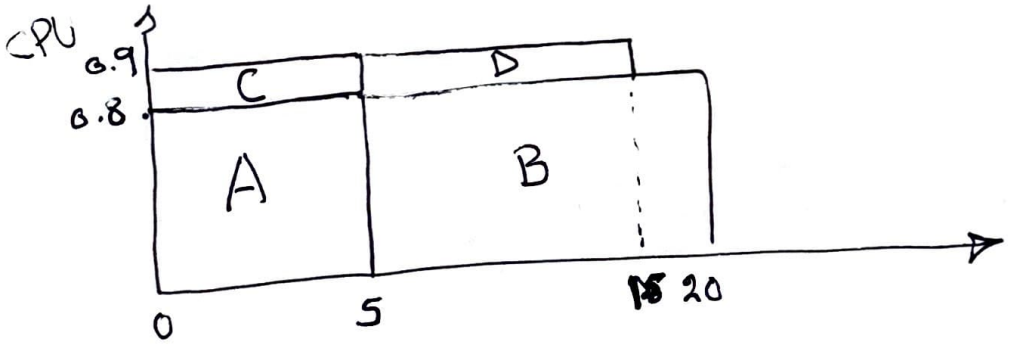
Pr 4 in HW#1

A B CPU-bound. 80%

C D I/O-bound. 10%.

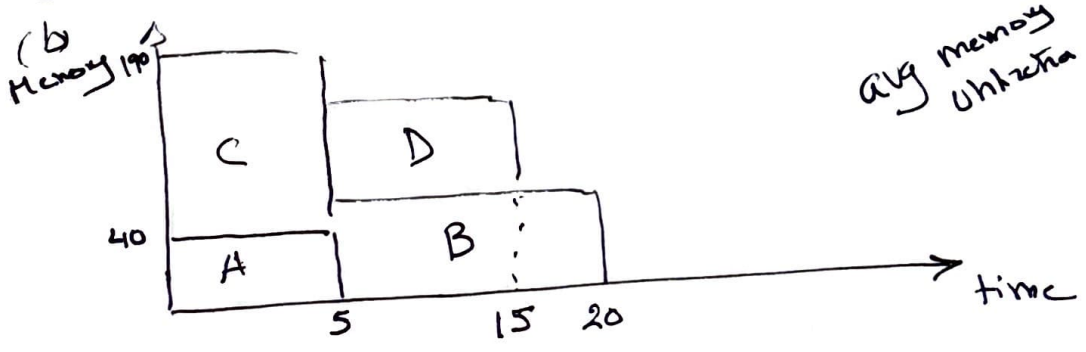
↳ I/O 90%.

M = 250MB.



avg utilization of the CPU = $\frac{15*0.9+6.8*5}{20}$

(a) @ 20.



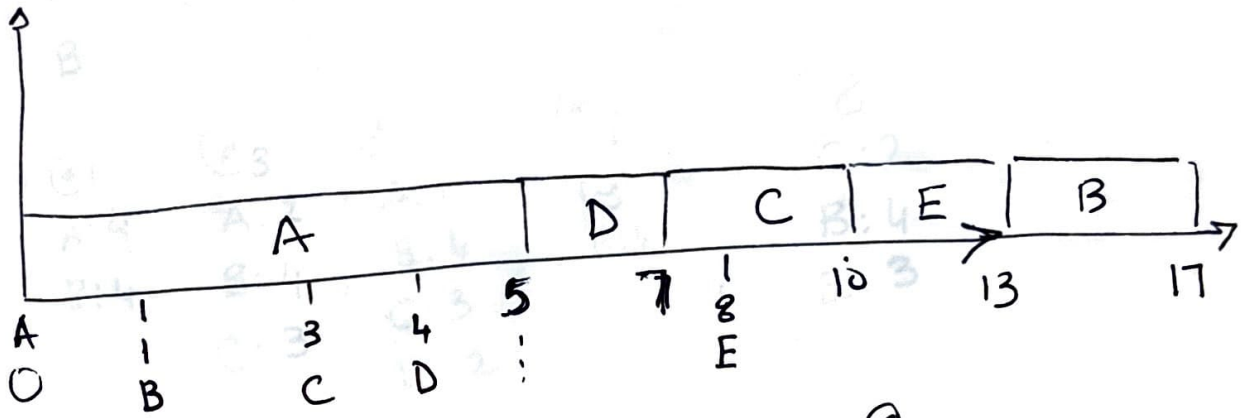
avg memory utilization = $\frac{190*5+150*10+50*5}{20*250}$

(d) 4/20 min 12/hr.

(e) Avg. Turnaround time = $\frac{5_A + 5_C + 20_B + 15_D}{4}$.

P1 Part (d)

STF



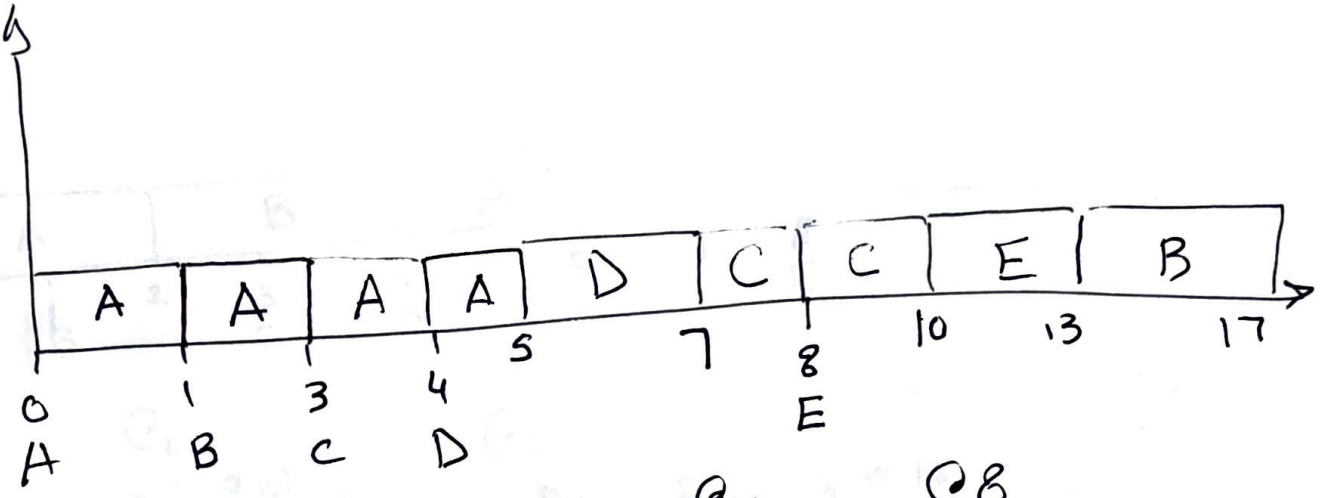
@5
B 4
C 3
D 2

@7
B4
C3

@10
E3
B4

Avg. Turnaround Time = $\frac{5_A + 3_D + 7_C + 5_E + 16_B}{5}$

(E)



SRTF

@1
A:4
B:4

@3
A:2
B:4
C:3

@4
A:1
B:4
C:3
D:2

@7
C:3
B:4

@8
C:2
B:4
E:3

(F) Preemptive HRRN.

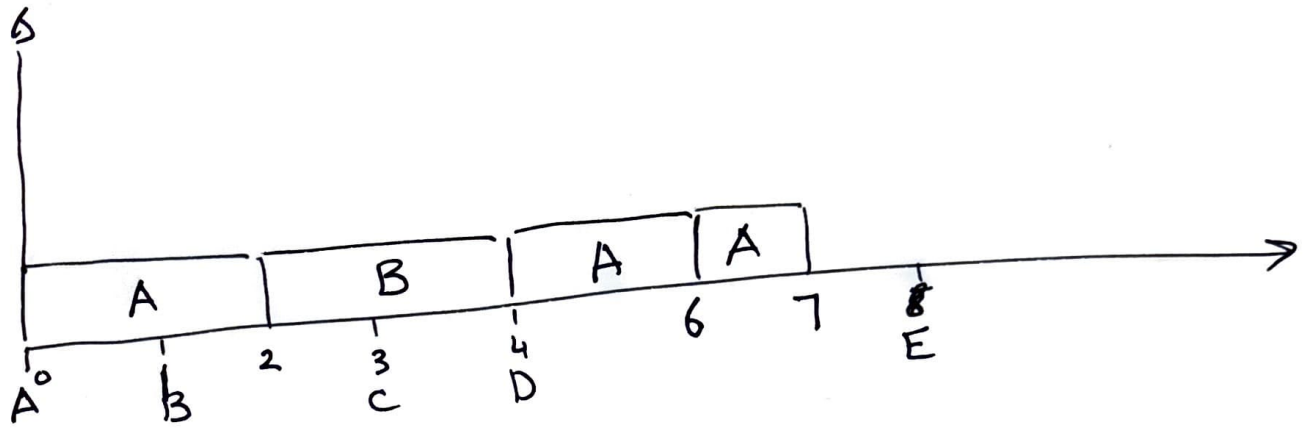
$$R = \frac{W+S}{S}$$

S: remaining service time

W: From. Original arrival

PHRRW

J



C2

A: $\frac{0+3}{3} = 1$

B: $\frac{1+4}{4} = 5/4 =$

C4

A: $\frac{2+3}{3} = 5/3 = 1.6$ ✓

B: $\frac{1+2}{2} = 3/2 = 1.5$

C: $\frac{1+3}{3} = 4/3 = 1.33$

D: $\frac{0+2}{2} = 1$

C6

A: $\frac{2+1}{1} = 3$

B: $\frac{3+2}{2} = 2.5$

C: $\frac{3+3}{3} = 2$

D: $\frac{2+2}{2} = 2$

C7

B: $\frac{4+2}{2} = 3$ ✓

C: $\frac{4+3}{3} = 2.3$

D: $\frac{3+2}{2} = 2.5$