2303 44

D D M M Y Y Y Y

1.

a. Operating System

Operating System is a software which acts as a intermediat between user of the computer and the system.

there are mainly two views.

① user view
② System view.

① user view.

* ~~resource~~ if

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D D M M Y Y Y Y

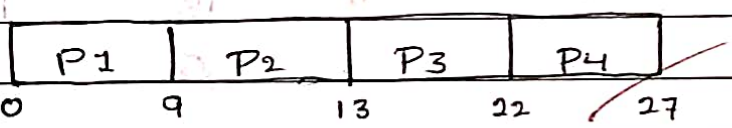
4

a.

Process	Arrival time	Burst time	Priority
P1	0	9	3
P2	1	4	2
P3	2	9	1
P4	3	5	4

FCFC,

Gnatt chart



waiting time,

P1 = 0 P2 = 9 P3 = 13 P4 = 22

Average waiting time = $\frac{0+9+13+22}{4}$

$= \frac{44}{4}$

$= 11$ ms

P1	9	8
P2	4	3
P3	9	
P4	5	

Logic wall

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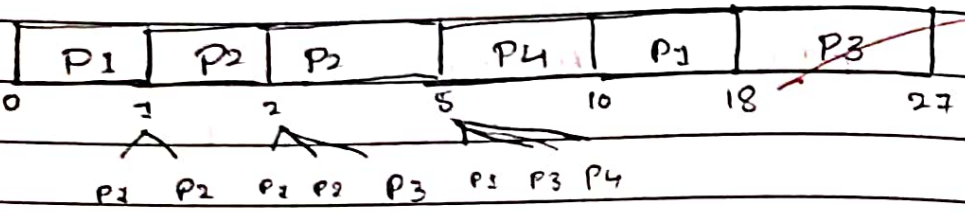
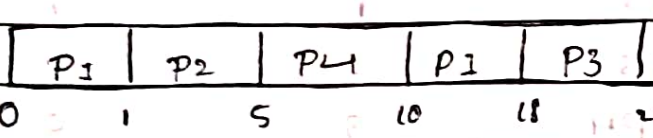
SRTF,



Gantt chart



Process	A.T	B.T	C.T	T.A.T	W.T
P1	0	9	10 18	10 18	1 9
P2	1	4	1 5	0 4	4 0
P3	2	9	8 27	16 25	7 16
P4	3	5	5 10	2 7	3 2

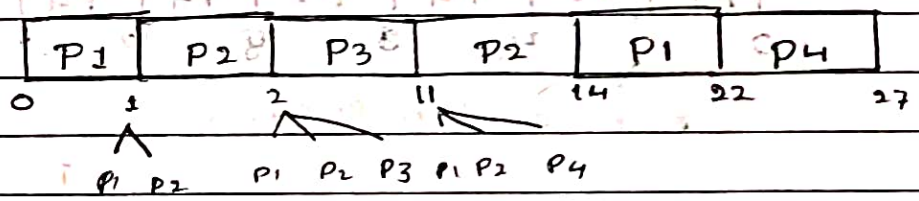
A.V.g T.A.T = $\frac{18+4+25+7}{4}$ = 13.50 ms

Avg W.T = $\frac{9+0+16+2}{4}$ = 6.75 ms.

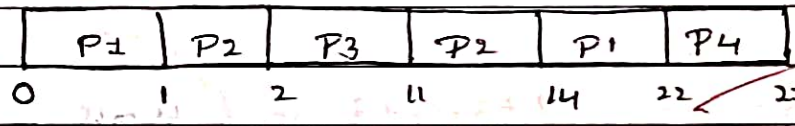
D D M M Y Y Y Y

Priority.

Process	A.T	B.T	Priority	C.T	T.A.T	W.T
P1	0	9	3	22	0	-9
P2	1	4	2	14	13	9
P3	2	9	1	11	9	0
P4	3	5	4	27	24	19



Gantt Chart



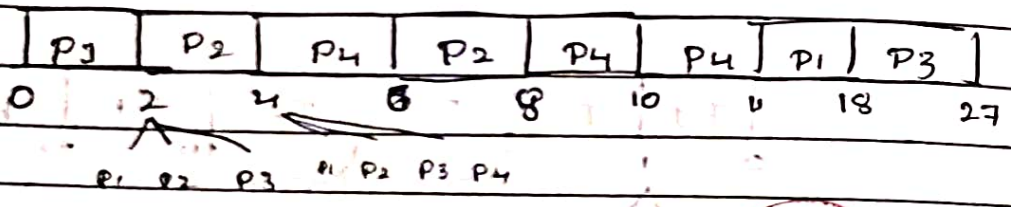
$$\text{Avg T.A.T} = \frac{0+13+9+24}{4} = \frac{46}{4} = 11.5 \text{ ms}$$

$$\text{Avg W.T} = \frac{9+9+19+0}{4} = 9.25 \text{ ms}$$

D D M M Y Y Y Y

Round robin

Process	A.T	B.T	Priority	C.T	T.A.T	W.T
P1	0	9 8 7	3	18	11	9
P2	1	4 6 6	2	8	7	3
P3	2	9	1	27	25	16
P4	3	8 3 1	4	11	8	3



Avg T.A.T = $\frac{18+7+25+18}{4}$ = 14.50 ms

Avg W.T = $\frac{9+3+16+3}{4}$ = 4 ms

DD MM YYYY

11 b.

i

Multiprocessor systems	clustered systems
• The systems which have two or more processors those are called as multiprocessor systems	• In this two computers or systems are connected with each other in a clustered way such type of systems are called clustered system
• Advantages of multiprocessor systems are • increased throughput • economy of scale • increased scalability.	• Advantages of • high availability of resources & services
• There are two types ○ Asymmetric systems ○ Symmetric →	• Types • Asymmetric ○ Symmetric
• Hot standby mode monitors the other systems if it fails it will become active server	• If one systems fails the other monitoring system takes up its job task and starts working.

D D M M Y Y Y Y

	Multi Programming	multi tasking.
•	In multi programming at a time more than one program is executed	• multi tasking is time related.
*	By using system resources such as memory, time, clock etc programms are going to processed	• By using the resources of computer system processor is can process multi more than one task

D D M M Y Y Y Y

4. b.

Process	Threads
* Process is complex as compare to threads	* Thread is not complex as compare to process
* In process execution takes place	* In threads execution is not takes place
* Processon are not a light weighted structures.	* Threads are light weighted structure
* It is not a basic unit.	* Thread is a basic unit.
* process not have the segments	* Threads has segments
* more Execution time requires	* Less execution time
* Execution of programs per process	* Sub units of process is threads
* requires more time	* requires less time
* Data share is possible	* Data share is not possible

D D M M Y Y Y Y

1. a

2. a

3. b

4. b

5. b