2CS0362

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Test - I

Module - 1

1) a) Ans:- An operating system is a software which acts as intermediate between user, Computer and Computer hardware

→ The operating system manages the Computer hardware

→ The operating system executes the Program in convinient and easy manner.

The services of operating system are :-

i) User Interface :- here the user Comands the operating system like a graphical user Command, a Command line system etc

ii) I/O operations :- Here operating system allows the data to and from the I/O device to execute the Program.

iii) File - System manipulation :- The ~~OS~~ operating system can read & write the data in File, either b/w the Processes is in the same Processor or b/w the Processes is in different Processor or different machine.

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ii) Communication :- Inter-Communication Sys
IPC, Storage System all are Connect
thought the Communication

i) Resource allocation :- main memory, Secon
memory, storage space, I/o devices.
All are allocation to multiple file
and multiple device in the resources

iv) error detection :- It detection the
error in the file and operates
billing or statisfication for the
~~for the~~ future Performance.

v) Protection & Security :- The operating
System service is ~~Protects~~ Check
the all System Programs are Works For
the main System are in Control

vi) Program execution :- The operating Syste
Can be ~~execute~~ run. the Program in
RAM, execute the Program, terminate
the Program from the service

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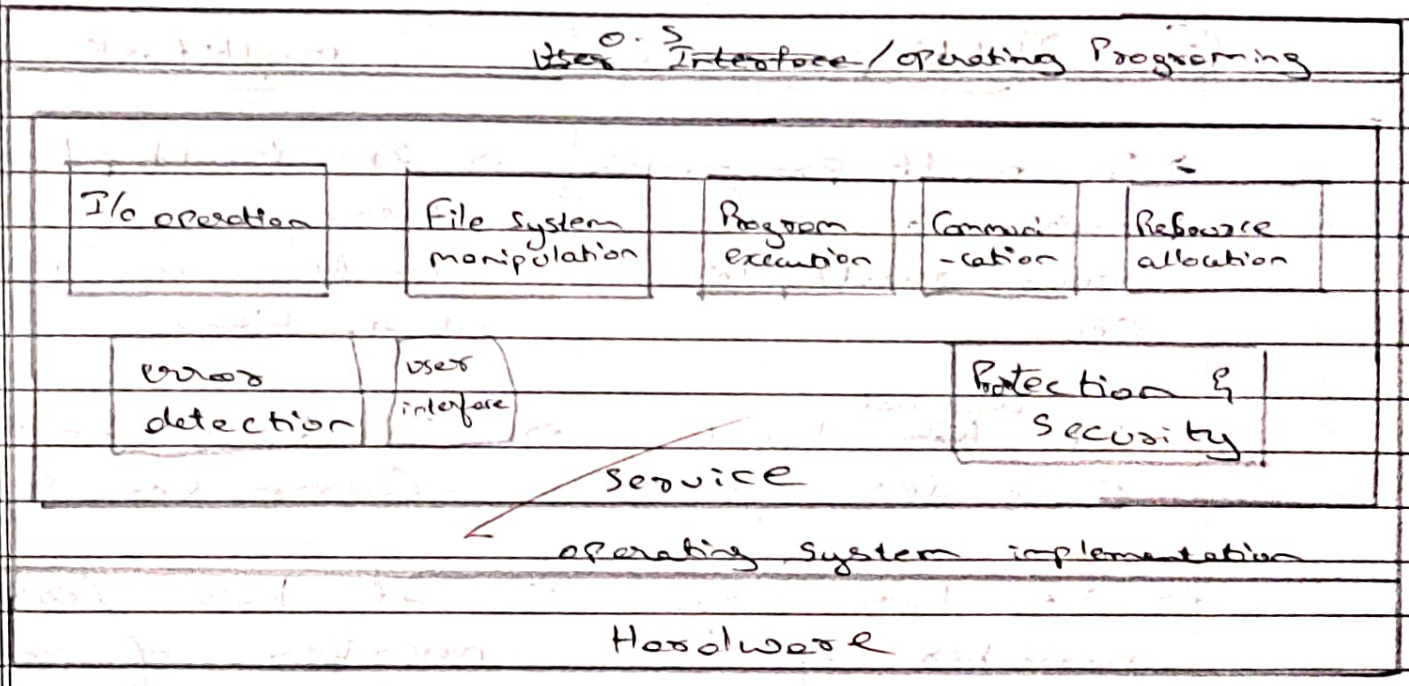

1)b)A= i) Multi Processor system

-> It executes the program in multiple CPU resources

-> It is large number execution Program and each as its own memory resource

-> In involves independent in the execution of the task

Cluster System

-> It executes the program in same resources or memory space

-> every program contains some memory resource

-> It involve interleaved in the execution of the task at the same time

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(ii)

Multi-programming	multitasking
→ In multi programming every program using multiple CPU	→ In multitasking every program execution in Process at a time
→ It does not host computer system	→ It has host computer system
→ It has large number of memory allocation	→ It has less number of memory allocation
→ It is executed one by one in multiple resource	→ Ite is executed at a time in a single resource
→ It is less flexible	→ It is more flexible
→ [illegible] expensive	→ Cost Saving
→ Isolation is not required.	→ Scalability → Isolation is required

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Module- 2

4) Ans :- i) FCFS

Process	A-T	B-T	C-T	T-AT	W-T
P1	0	9	9	9	0
P2	1	4	13	12	8
P3	2	9	22	20	11
P4	3	5	27	24	19

mode :- ~~Abort~~ non-Preemptive Criteria :- Arrival time

Gantt Chart :-

avg waiting time = $\frac{38}{4}$ = 9.5

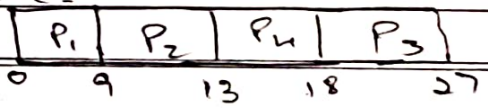
avg T.A.T :- $\frac{65}{4}$ = 16.25

ii) SRTF

Process	A-T	B-T	C-T	TAT	W-T	R-T
P_1	0	9	9	9	0	0
P_2	1	4	13	12	8	8
P_3	2	9	27	25	16	16
P_4	3	5	18	15	10	10

mode :- non-Preemptive Criteria :- Burst time

Gantt Chart :-



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avg Waiting time = $\frac{34}{4}$ = 8.5

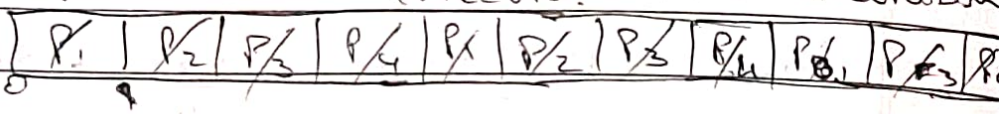
avg T.A.T = $\frac{61}{4}$ = 15.25

ii) Round Robin (Q = 2 ms)

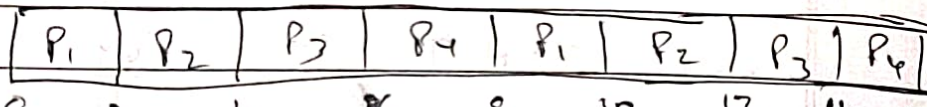
Process	A.T	B.T	C.T	T.A.T	W.T
P1	0	8	26	26	17
P2	1	4	12	11	7
P3	2	9	27	25	16
P4	3	5	21	18	13

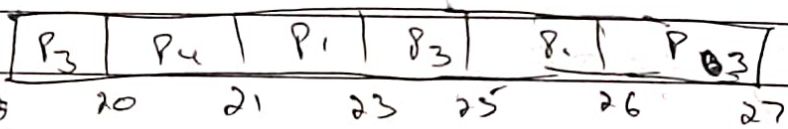
mode :- Preemptive Criteria :- Time Quantum

Ready Queue



Gantt Chart





avg W.T :- $\frac{53}{4}$ = 13.25

avg T.A.T :- $\frac{80}{4}$ = 20

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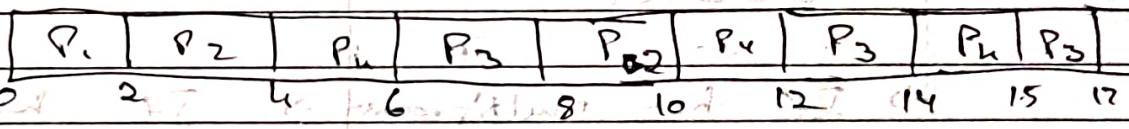
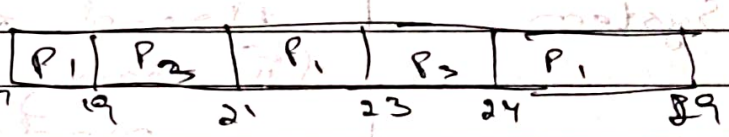
iii) Priority :-

Process	A·T	B·T	Priority	C·T	TAT	W·T
P1	0	8	3	19	19	11
P2	1	4	2	10	9	5
P3	2	9	1	24	22	13
P4	3	8	4	15	12	7

Criteria :- Burst time mode :- Preemptive

Gantt Chart :-





Avg W·T :- $\frac{45}{4} = 11.25$

Avg TAT :- $\frac{72}{4} = 18$

4)b)A :-

Process	threads
→ It executes the Program with multiple CPU	→ It executes the Program with same memory location.

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→ In multiprocessing they have independent Program to execute	→ In thread they are same memory source
→ It has several Programs & each has memory resource	→ resource are for all program in thread
→ It has multiprocessing System	→ It has (i) one-to-one thread model (ii) many to one thread model (iii) many to many thread model

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Quiz

1) A :- a) fork

2) A :- a) When Process is scheduled to run after some execution

3) A :- b) Communication b/w two Process

4) A :- b) Program Counter

5) A :- b) 5