2C 20.2.24

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1 2 0 1 2 0 2 4

TEST-01

Module - 1

1) System calls are used to specify to access the operation system.

The types of system calls are :-

i) Process control
ii) Device Management
iii) Information Management
iv) File Management
v) Protection
vi) Communication.

i) Process control :- Process is the program under execution. In Process control the system call is like a function where operating system is responsible for creation, execution, deletion of a process. Process termination, run

ii) File management :- In File management operating system the system call is used for opening a file closing a file, creating a file, deleting a file, and other operations are performed.

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iii) Device Management :- In Device management the operations on the devices connected to the node which can be peripheral devices, I/O devices, hard disks are managed. The addition and ejection of devices is managed and other operations such as data transfer, connectivity between the devices is managed.

iv) Information Management :- In information management the data or information in the memory, address, name, date & time and other such parameters are controlled and stored. Information such as name, date, time, limits, etc memory allocated, size is known by the operating system with system call.

v) Communication :- In communication the operating such as sending or receiving a file, message, media, etc is done by the operating system.

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vi) Protection :- In protection the harmful contents of system prevents the access of system information by from non-privileged users by giving setting multiple parameters for authorisation. This way the system is prevented by access of non privileged users and doesn't cause any harm to the system.

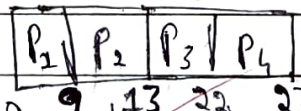
Module - 2

4] a) i) FCFS

Process	Arrival Time	Burst time	Priority	Completion time
P1	0	9	3	9
P2	1	4	2	13
P3	2	9	1	22
P4	3	5	4	27

ii) FCFS → First come First serve

Gantt chart



Process	Turn around time	Waiting time
P_1	9	0
P_2	12	8
P_3	20	11
P_4	24	19

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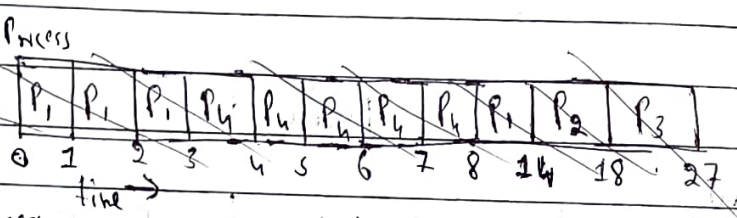
Average turn around time = $\frac{9+12+20+24}{4}$

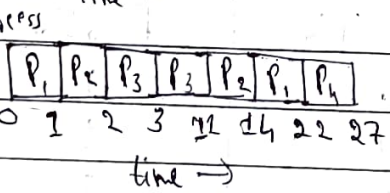
$= \frac{65}{4}$ 1.375 = 1.375 s

Average waiting time = $\frac{0+8+11+19}{4}$

$= \frac{38}{4} = 9.5$ s

ii) Priority (Preempting) :-





Process	Completion time	Turn around time	Waiting time
P_1	22	22	13
P_2	14	13	9
P_3	11	9	0
P_4	27	24	19

Avg. TAT = $\frac{22+13+9+24}{4} = \frac{68}{4} = 17$ s

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Avg. WT = $\frac{13+9+0+19}{4}$

= $\frac{41}{4}$ = 10.25s

iii) SRTF :-

Process

Gantt chart

Process	Completion time	Turn around time	Waiting time
P_1	19	19	10
P_2	5	4	0
P_3	28	26	17
P_4	10	7	2

Avg T.AT = $\frac{19+4+26+7}{4}$ = $\frac{56}{4}$ = 9s

Avg WT = $\frac{10+0+17+2}{4}$ = $\frac{29}{4}$ = 7.25s

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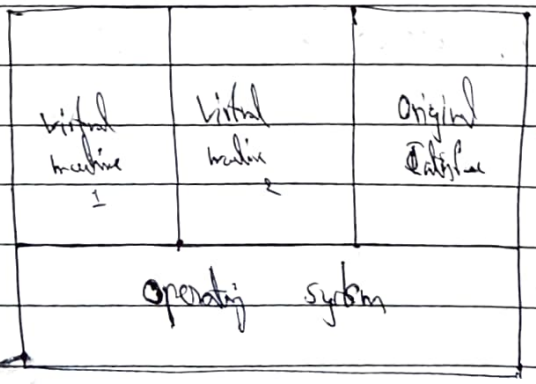
b) Ans

Process	Threads
i) Process is the program under execution.	i) Threads are the basic units of processor.
ii)	ii)

2) a) Ans Virtual Machine :- Virtual machine is the process in which a system or node consist of more than one operating system interface. This creates a illusion to the users that there is access to more than one interface in a single system. Ex:- JVM, browser, etc.



With this concept a user can have access to more than one interface in a single system and there is possibility to also share data or information between the interfaces which can be done through some processes. The Example for

Virtual machine is JVM which stands for Java Virtual Machine, which was introduced to execute the byte code. ~~Normally Generally~~ ~~the~~ As Java is a platform independent language. the java compiler ~~converts~~ ~~the~~ compiles the program and slowes on convert it into byte code. The Java Virtual Machine takes the byte code as input executes and gives the desired output to the user.

Quiz

1] b) ✗

2] a) ✓

3] b) ✓

4] b) ✓

5] c) ✗