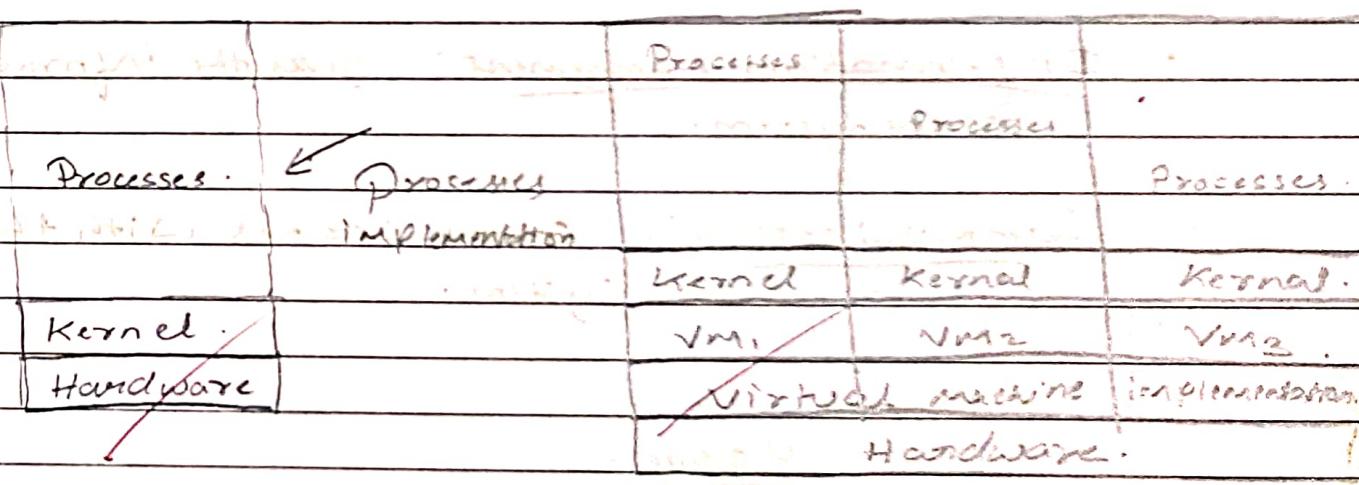


D	D	M	M	Y	Y	Y	Y

## Module - 1

- 2) a) virtual machines use the ~~hardware~~ part of the system in executing environment.  
 In this illusion the hardware part of the system in executing environment will be ~~the~~ own private computer.

This illusion process has the ~~two~~ separate processor. Eg memory. Host OS is the main all other OS installed are called guest OS.



- b) There are six types of system calls:

- 1) Process control
- 2) file management
- 3) device management
- 4) Information management.
- 5) Communication

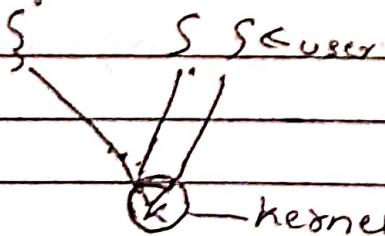
DD MM YY

## 6) Protection

- Process Control :- ~~CONTROLS~~ ~~sets the~~ INPUT mode.  
is the process of the system.
- file management :- manages all the files of the system
- device management :- manages the devices in the system
- Information management :- gives the information to the system.
- Communication :- communicates with the system.

## Module - 2

- 3) b) • many to one threading model;



→ many user to one kernel

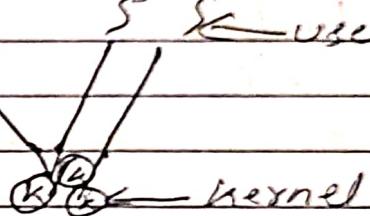
D	D	M	M	Y	Y	Y	Y

- One to many threading model  
S < user.



one user to one kernel

- Many to many



Many to less or more kernels

\* Above mentioned are the different types of multi threading models.

4) a)

Process	A.T	Burst time	Priority
P <sub>1</sub>	0	9	3
P <sub>2</sub>	1	4	2
P <sub>3</sub>	2	9	1
P <sub>4</sub>	3	5	4

FIFO

DD MM YY YY YY

Process	A.T	B.T	Priority	W.T	TAT
P <sub>1</sub>	0	9	3	9	9
P <sub>2</sub>	1	4	2	18	17
P <sub>3</sub>	2	9	1	22	20
P <sub>4</sub>	3	5	4	27	24

$$TAT = A.T - W.T$$

~~P<sub>1</sub>, P<sub>3</sub>, P<sub>5</sub>, P<sub>2</sub>, P<sub>4</sub>~~ preemptive

P <sub>3</sub>	P <sub>2</sub>	P <sub>2</sub>	P <sub>4</sub>
0 9	18	22	27.

SRTF

Process	A.T	B.T	Priority	w.t	TAT
P <sub>1</sub>	0	9	3	9	9
P <sub>2</sub>	1	4	2	18	17
P <sub>3</sub>	2	9	1	22	20
P <sub>4</sub>	3	5	4	27	24

P <sub>1</sub>	P <sub>3</sub>	P <sub>2</sub>	P <sub>4</sub>
0 9	18	22	27.

~~P<sub>1</sub>~~



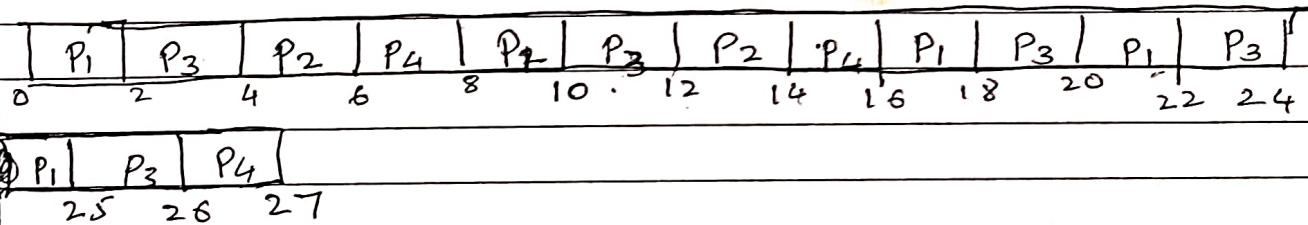
Round robin:  $q = 2 \text{ ms}$

Process	A.T	B.T	Priority	W.T	TAT
P <sub>1</sub>	0	9 7 7 7 1	3	9	9
P <sub>2</sub>	1	4 2 0	2	18	17
P <sub>3</sub>	2	9 7 7 7 1	1	22	20
P <sub>4</sub>	3	8 3 0	4	27	24

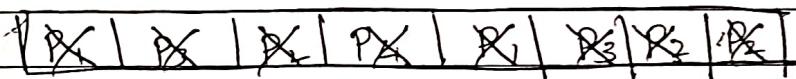
(16) (10)

running queue.

④ ready queue



ready queue



b) Distinguish btw process & threads

Process	Threads -
has high memory storage	has low memory storage.
thread $\xrightarrow{s} \text{ user}$	multi thread $\xrightarrow{s} \text{ user}$

D D M M Y Y Y

QUIZ

- 1) a)
- 2) a)
- 3) b)
- 4) b)
- 5) d)

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER

ANSWER