2C303268

D D M M Y Y Y Y

Module - 1

1a) Operating System is defined as the interface between the computer user and the computer hardware

The Services of OS

-> Operating System provides multitasking :- In Operating System it can perform multiple tasks simultaneously by using the method called context switching

-> operating System provides multiprogramming : In operating System it perform multiple programs simultaneously, operating System executes multiple programs one after the other within micro seconds, user feels multitasking is going on but it will keep in hold diagram - 9

-> operating System provide client server computing :- In client server computing tasks has been divided into two entities (1) client who sends the Request to server where (2) server processes the request and sends back to client

-> Application programs :- it allows system resource to solve the computing problems of the user

-> Note :-

-> Operating System provides an environment to install the other applications without operating system other application doesn't exit

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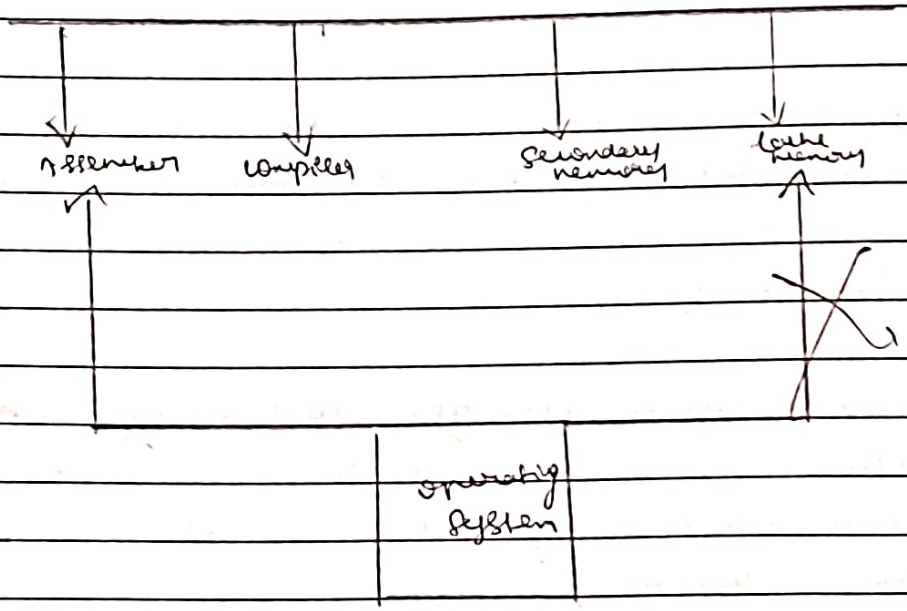


b)

| Multiprocessor System | Clustered System |
| --- | --- |
| | |

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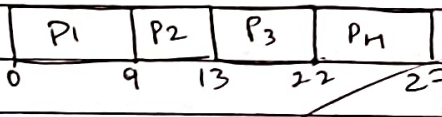
Module-2

H.Q FCFS

| Process | AT | BT | CT | TAT |
|---|---|---|---|---|
| $P_1$ | 0 | 9 | 9 | 9 |
| $P_2$ | 1 | 4 | 13 | 12 |
| $P_3$ | 2 | 9 | 22 | 20 |
| $P_4$ | 3 | 5 | 27 | 24 |

$\frac{65}{4} = 16.5$

Gantt chart




average time = 16.5

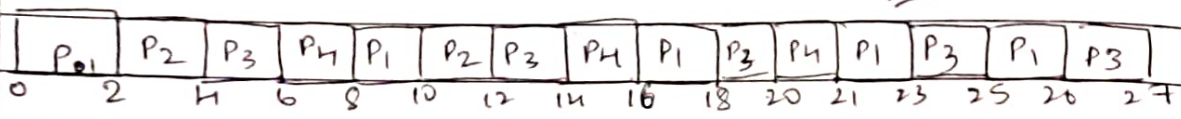
D D M M Y Y Y Y

RR → Round Robin

TQ = 2ms

| Process | AT | B.T | CT | TAT |
|---|---|---|---|---|
| P1 | 0 | 9 7 5 3 1 | 26 | 26 |
| P2 | 1 | 4 2 0 | 12 | 11 |
| P3 | 2 | 8 7 5 3 1 | 27 | 25 |
| P4 | 3 | 5 3 1 0 | 21 | 18 |
| | | | | 20 |

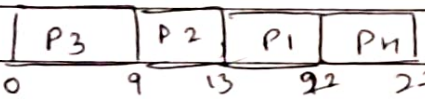
= 80/4 = 20




Priority

| Process | AT | B.T | Priority | CT | TAT |
|---|---|---|---|---|---|
| P1 | 0 | 9 | 3 | 22 | 22 |
| P2 | 1 | 4 | 2 | 13 | 12 |
| P3 | 2 | 9 | 1 | 9 | 7 |
| P4 | 3 | 5 | 4 | 27 | 24 |

Gantt chart




Average time = 16.25

D D M M Y Y Y Y

| Process | Threads |
|---|---|
| → Process is heavy weight or representative | → Thread is a light weight process |
| → process switching needs interaction with OS | → Threads does not need to interact with OS |
| → multiple processes without using threads use more resources | → one thread can read write or change the thread data |
| → each process operate independently | → multiple threaded processes use multiple resources |

Quiz

1) option b create ✗
2) option b when process is unable ✗
3) option b communication two process ✓
4) option b program counter ✓
5) option d 7 ✗