

Exam. Code : 105705

Subject Code : 1578

B.Sc. (IT) Semester—V

OPERATING SYSTEM

Paper—II

Time Allowed—3 Hours] [Maximum Marks—100

Note :—Attempt any **FIVE** questions. All questions carry equal marks.

- Define the following types of operating systems :
 - Batch Processing
 - Multiprogramming
 - Multiprocessing
 - Time Sharing
 - Real Time.
- Define a process. How is it different from a program ?
What is the relation between a process and a program ?
Explain various process states.
- Following is the information relating to some processes :

<i>Process</i>	<i>Burst</i>	<i>Priority</i>	<i>Arrival Time</i>
P1	21	1	0
P2	13	5	6
P3	10	3	8
P4	8	1	10
P5	6	6	13

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(Contd.)

Using the above information, compute the average waiting time and average turnaround time for each process for the following algorithms :

- (a) Preemptive Shortest Job First
- (b) Priority Scheduling
- (c) Preemptive Priority Scheduling
- (d) Round Robin (with time quantum of 3 units.)

Ignore the arrival time for non-preemptive algorithms.

4. What is Memory Management ? What are the different memory management techniques ? Write a note on Demand Paging.
5. Discuss the various page replacement algorithms giving examples.
6. Elaborate the file management system of an operating system.
7. What do you mean by device management ? Explain the structure of disk.
8. Write short notes on the following :
 - (a) Swapping
 - (b) Thrashing
 - (c) External Fragmentation
 - (d) Banker's algorithm.