Exam. Code : 105705
Subject Code : 1474

B.Sc. Information Technology 5th Semester
OPERATING SYSTEM
Paper—II

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Attempt *five* questions in all. All questions carry equal marks.

1. Define an Operating System. Discuss in detail the various types of Operating Systems.

2. Following is the information related to some processes :

Process	Burst	Priority	Arrival Time
P1	10	3	0
P2	8	2	2
P3	4	1	8
P4	8	2	16
P5	12	1	24
P6	4	3	30

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

(a) Shortest Job First

(b) Preemptive Shortest Job First

(c) Priority Scheduling

(d) Preemptive Priority Scheduling

(e) Round Robin (time quantum of 3 units).

Note : Ignore the arrival time for non-preemptive algorithms.

3. Define and distinguish between paging and segmentation techniques of memory management.

4. Define Page Fault. What are the reasons of occurrence of page faults ? Write the steps required for servicing page faults.

5. Discuss the issues concerning Disk Scheduling and explain the various algorithms available for disk scheduling with the help of examples.

6. Discuss in detail the File System Structure.

7. Define Deadlock. What are the necessary conditions for occurrence of deadlock ? How deadlocks can be prevented ? Explain.

8. Write short notes on the following :

(a) Multi-programmed batch

(b) Logical versus Physical address space

(c) Thrashing

(d) Context Switch.