Exam. Code : 107205
Subject Code : 1774

Bachelor of Computer Application (BCA) 5th Semester

OPERATING SYSTEM

Paper—III

Time Allowed—3 Hours] [Maximum Marks—75

Note :—There are **EIGHT** questions. Candidates are required to attempt any **FIVE** questions. All questions carry equal marks.

SECTION—A

1. Define an Operating System. Elaborate in detail the different types of Operating Systems.
2. Using the given information about the processes, calculate Average Waiting Time and Average Turnaround Time of each process under following scheduling algorithms :
   (a) First Come First Served
   (b) Shortest Job First
   (c) Round Robin (with time slice of 4 units)

Process	Burst	Priority	Arrival time
P1	19	3	0
P2	15	2	3
P3	10	1	12
P4	6	4	12
P5	3	3	15

SECTION—B

3. Define Semaphores. In which cases semaphores are used and how these can be implemented ?
4. Define and distinguish between Paging and Segmentation methods of memory management giving suitable examples.

SECTION—C

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

SECTION—D

7. When is a system said to be in the deadlock state ? What are the characteristics of deadlocks ?
8. Discuss the various methods of deadlock avoidance and prevention.