OPERATING SYSTEM AND SYSTEM PROGRAMMING
(Theory-2)

Time-3hrs
Full Marks-80

All figures in the right hand side margin indicate marks
Answer any five questions

1. a. Define concept of multitasking?   2
    b. What is PCB? Explain the various components of PCB.   6
    c. Differentiate between preemptive and non-preemptive CPU scheduling algorithm. Explain the function of all the CPU scheduling algorithms you know?   8

2. a. Define semaphore.   2
    b. What do you mean by process synchronization? Explain the critical section problem in the process of synchronization.   6
    c. What is deadlock? Explain necessary condition for deadlock in a system having processes and resources?   8

3. a. What do you mean by turnaround time?   2
    b. Explain Bankers algorithm with an illustration.   6
    c. What is scheduler? Explain different types of file access method used in operating environment.8

4. a. What is page fault?   2
    b. Differentiate between paging and segmentation.   6
    c. What do you mean by file organization? Explain different types file access method used in operating environment.   8

5. a. What is spooling?   2
    b. Differentiate between contiguous and non contiguous memory allocation used by operating system.   6
    c. What is compiler? Explain the function each phases of a compiler.   8

6. a. What is swapping?   2
    b. Find out the average turnaround time average response time average waiting time of the following processing using FCFS scheduling algorithm (Assume the arrival time of all the process are same) 6

Process	CPU burst time
P1	3 msec
P2	6 msec
P3	9 msec
P4	12 msec
P5	15 msec

    c. Explain the function of I/O traffic controller, I/O scheduler and I/O device handlers.   8

7. a. What is virtual memory?   2
    b. Explain the different page replacement algorithm used in demand paging.   6
    c. Explain the functions of various types of operating system you know.   8