Con. 3808–10. (REVISED COURSE) **AN–3445**

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

1. a) What is an operating system? Explain in brief the different services which it provides.   10
   b) i) Explain different system calls of O.S.   05
        ii) Differentiate monolithic and layered structure of O.S.   05

2. a) Consider the following set of processes with the length of cpu burst given in Ms.

Process	Burst time	Priority
P1	10	3
P2	1	1
P3	2	4
P4	1	2
P5	5	2

   The processes are assumed to have arrived in the order p1, p2, p3, p4, p5 at time 0.
        i)   Draw the Gantt chart for FCFS, SJF, Priority and Round Robin (Quantum=1).
        ii)   Which algorithm results in the maximum average waiting time?   10

   b) Explain multilevel queue scheduling.   10

3. a) What is deadlock? Explain various deadlock prevention techniques.   10
   b) Explain critical section problem and its different solutions.   10

4. a) Explain paging in detail. Describe how logical address converted to physical address.   10
   b) Calculate Hit and Faults using various page replacement policies.(FIFO,LRU,OPT). for the following page sequence: (The page frame size is 3).   10
        2   3   5   4   2   5   7   3   8   7

5. a) Explain different techniques of disk scheduling.   10
   b) Explain process concurrency/synchronization of windows O.S.   10

6. a) Explain file allocation in detail.   10
   b) Explain how memory management takes place in Linux.   10

7. Write short notes on :–   20
        i) Semaphore
        ii) Unix File System
        iii) Segmentation
        iv) Distributed O.S.