[EUREC-735]
B.Tech. Degree Examination
Electronics & Communication Engineering
VII SEMESTER
OPERATING SYSTEMS
(Effective from the admitted batch 2012–13)

Time: 3 Hours
Max.Marks: 60

Instructions: Each Unit carries 12 marks.
Answer all units choosing one question from each unit.
All parts of the unit must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

UNIT-I

1. a) Write briefly about operating system structure 4
   b) Define Shell? Explain the differences between Kernel and shell 4
   c) Discuss about interrupts in brief 4

   OR

2. a) Write about memory hierarchy in detail 6
   b) Explain the purpose of system calls in detail with examples 6

UNIT-II

3. a) Explain the Banker’s algorithm for deadlock avoidance 6
   b) Define Process? Explain the fundamental states of a process with state transition diagram 6

   OR

4. a) Describe about the methods used to prevent deadlocks 6
   b) Explain semaphores usage and implementation in detail. 6

UNIT-III

5. a) Explain the functions performed by paging hardware 6
   b) Compare static and dynamic memory allocation 6
OR

6. a) Explain the basic concepts of demand paging 6  
b) Describe internal and external fragmentation with examples 6

UNIT-IV

7. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests, for each of the following disk scheduling:
   a) FCFS  b) SSTF  c) SCAN  e) C-SCAN 12

OR

8. a) What is disk management? Explain in detail how to improve the disk performance. 6  
b) Explain the various I/O data transfer schemes 6

UNIT-V

9. Explain the following
   a) intruders  b) viruses  c) trusted systems 12

OR

10. a) Compare sequential and direct file organization. 4  
b) Describe the commonly used operations on files with examples 8