COMP 5 – 6 (RC)

T.E. (Comp.) (Semester – V) (RC) Examination, May/June 2014
OPERATING SYSTEMS

Duration : 3 Hours | Total Marks : 100

Instructions : *1) Answer **any five** questions by selecting at least **one** from **each** Module.*
*2) **Assume** appropriate data **wherever** necessary.*

MODULE – I

1. a) Explain the process state transition diagram with 2 suspended states ? Draw the diagram clearly. 8
   b) Briefly explain the process control block information. 5
   c) Give the advantages of a Microkernel organization. 4
   d) What do you mean by multithreading ? 3
2. a) Explain the producer consumer problem and give a solution to infinite buffer producer consumer problem using Binary Semaphore. 8
   b) Differentiate between preemptive and non-preemptive scheduling. 4
   c) How does synchronization take place in communication of a message ? 4
   d) Explain UNIX SVR4 scheduling. 4

MODULE – II

3. a) How can deadlock be prevented ? 5
   b) With a help of an example explain FIFO page replacement algorithm. 5
   c) Give any 3 mechanisms to recover from a deadlock. 6
   d) What is Internal Fragmentation ? 4
4. a) What is Demand Paging ? 3
   b) Explain the following terms : 8
      i) Prepaging
      ii) Page table
      iii) Segment table
      iv) Fetch policy.
   c) Explain Multilevel Paging and inverted page table. 6
   d) What is Associative Mapping ? 3

P.T.O.

MODULE – III

5. a) Explain the tree-structured directory. 5
   b) Discuss file allocation in UNIX File Management. 6
   c) Differentiate between Indexed file and Hashed file. 5
   d) Explain contiguous file allocation. 4

6. a) List various disk scheduling algorithms. Differentiate them with examples. 8
   b) With a neat diagram explain the UNIX i-node structure. 6
   c) Discuss logical I/O and device I/O. 4
   d) What is transfer time ? 2

MODULE – IV

7. a) Explain UNIX password protection technique. 5
   b) Differentiate between access control list and capability list. 4
   c) Explain the various categories of attack. 6
   d) Discuss intruders. 5

8. a) Write a shell program to find Fibonacci of numbers. 5
   b) Explain the following commands : 5
      i) echo
      ii) cat
      iii) pwd
      iv) wc
      v) *ls* chap.
   c) Write a program to print the following pattern : 6

```
      1
    2  2
  3  3  3
4  4  4  4
5  5  5  5  5
```

   d) Write a program to display "HELLO WORLD". 4