COMP 5 – 6 (RC)

T.E. (Computer) (Semester – 5) (RC) Examination, May/June 2012
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.*
*3) Sketch diagram **wherever** required.*

MODULE – I

1. a) What are the advantages of parallel systems ? Also explain types of it. 6

   b) Draw and explain microkernel architecture. List and explain advantages of microkernel. 7

   c) Explain and justify how multilevel queue scheduling different from multilevel feedback queue scheduling. 7

2. a) What is critical section problem ? What requirements must be satisfied by a solution to the critical section problem ? 4

   b) State and explain dining philosopher problem. Also write symbolic code for this using Semaphores. 6

   c) What are Messages ? How they are different from Semaphore variables ? 5

   d) Write a short note on Monitors. 5

MODULE – II

3. a) What are characteristics of deadlock ? 4

   b) Explain Banker's Algorithm with the help of an example. 6

   c) Describe various methods for deadlock recovery. 5

   d) Write a short note on thrashing. 5

P.T.O.

4. a) What is demand paging ? Enumerate and explain briefly the steps in handling page fault. 6

   b) Write a short note on multilevel paging. 4

   c) Explain segmentation as memory management technique. 5

   d) What is Belady's Anomaly ? Explain with an example. 5

MODULE – III

5. a) Write a short note on Windows File Management. 6

   b) What are Block and Character devices ? 3

   c) Explain the directory structure used in UNIX. 6

   d) What is polling ? Explain concept of handshaking in I/O. 5

6. a) Write a short note on swap space management. 6

   b) Describe different services offered by Kernel I/O subsystem. 8

   c) Describe SCAN and C-SCAN disk scheduling algorithms. 6

MODULE – IV

7. a) Write short notes on : (5×4=20)

   i) Intruders ii) Worms

   iii) Access matrix iv) Viruses

8. a) Write a shell script to print largest number of the given 3 numbers. 4

   b) Write a shell script to check whether number entered through keyboard is odd or even. If it is odd, then reverse the digits of the number and print it. 6

   c) Explain following shell commands with example : 10

   i) head ii) ls – l

   iii) mv iv) cp

   v) cat