Reg. No. : .....

Name : .....

Seventh Semester B.Tech. Degree Examination, April 2015
(2008 Scheme)
08-704 Elective III (c) : Modern Operating Systems (E)

Instruction : *Answer* ***all*** *questions from Part – **A** and any **one full** question from **each** module of Part – **B**.*

Time : 3 Hours Max. Marks : 100

1. Explain the concept of multiprogramming.
2. Which scheduling algorithm is provably optimal in terms of turn around time ?
3. Differentiate between Process and Thread.
4. What are conditions that create Deadlocks ?
5. Differentiate between internal fragmentation and external fragmentation.
6. Explain clock page replacement algorithm.
7. How does working set model handles thrashing ?
8. What are the functions of I/O device controller ?
9. What is mean by RAID disks ?
10. Explain the principle of J/O software.

(10x4=40 Marks)

PART – B

Module – I

11. a) What is a semaphore ? How does it is implemented ? How does it prevent busy waiting ? **10**

    b) Calculate the Turn around time, waiting time average waiting time for FCFS, SJF, shortest remaining time next and Round Robin (2 unit) scheduling algorithms for the processes given below. **10**

Process	Arrival Time	Burst Time (CPU)
P_1	2	4
P_2	4	6
P_3	5	3

OR

12.a) Explain deadlock recovery methods. 6

b) Explain any two deadlock avoidance method. 10

c) Explain deadlock Prevention method. 4

Module – II

13. a) What is virtual memory ? How it is implemented ? 10

b) Explain the following page replacement algorithm with an example

1) FIFO 2) Optimal 3) LRV. 10

OR

14. a) What is swapping ? Explain the memory management with Bit maps and linked list with examples. 14

b) Explain occurance of Belady's anomoly. 6

Module – III

15. a) What is a device driver ? Why are device drivers used in a O.S. ? 10

b) Explain various disk arm scheduling algorithms. 10

OR

16. a) Explain the following

1) File structure 2) File types

3) File access 4) File attributes. 10

b) Explain single level directory system and two level directory system. 10