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Reg. No. : .....

Name : .....

Fourth Semester B.Tech. Degree Examination, May 2014
(2008 Scheme)
Branch : COMPUTER SCIENCE
08.406 : Operating Systems (R)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Are SJF-based algorithms used in CPU-scheduling and disk-scheduling (Shortest-Seek-Time-First) optimal ? Why ?
2. Why is the swap partition kept separate from the rest of the file system ?
3. Differentiate between multi tasking and multi programming.
4. What is Belady's anomaly ?
5. Does paging eliminate fragmentation ? Why ?
6. What are the factors considered while choosing the page size ?
7. How does the Banker's algorithm check whether a state is safe ?
8. What is meant by C-SCAN algorithm ?
9. What is an inverted page table ? Why is it required ?
10. List a strategy for preventing circular wait.

P.T.O.

PART – B

Answer **any one** question from **each** Module.

Module – I

11. a) Differentiate between hard real-time systems and soft real-time systems. Give 2 examples of each. **12**

    b) Why did simple batch OS result in poor CPU utilization ? What were the innovations made which led to a better CPU utilization ? **8**

12. a) Explain how i-node based file allocation is implemented ? **12**

    b) Compare the various file allocation methods and explain where each method is most suitable. **8**

Module – II

13. a) What are the requirements to be satisfied by a solution to the critical section problem ? **6**

    b) Show that the Bakery algorithm satisfies the requirements mentioned above. **14**

14. a) Explain how segmentation with paging is implemented. **12**

    b) What are the steps involved in servicing a page fault ? **8**

Module – III

15. a) Can the disk scheduling algorithm be implemented in the disk drive controller, rather than in the OS ? Why ? **8**

    b) Compare the various disk-scheduling algorithms. **12**

16. a) How is deadlock prevention done ? Explain the various methods used for deadlock prevention. **12**

    b) Distinguish between access control matrix and access control list. Give examples for the use of each one. **8**
