



Reg. No. : .....

Name : .....

**Fourth Semester B.Tech. Degree Examination, May 2014**

**(2008 Scheme)**

**Branch : COMPUTER SCIENCE**

**08.406 : Operating Systems (R)**

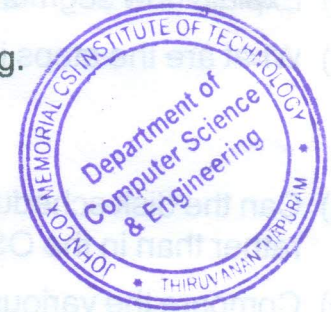
Time : 3 Hours

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.





## 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