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Reg. No. : .....

Name : .....

Fourth Semester B.Tech. Degree Examination, May 2013
(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. What are the services provided by OS ?
2. When is batch-processing preferred over time-sharing ?
3. What is FAT ?
4. What are the criteria for performance measure of various CPU scheduling algorithms ?
5. Explain the use of process control block in the OS.
6. How can we protect memory using hardware schemes ?
7. What is meant by CPU burst and I/O burst cycle ?
8. What is device driver ?
9. What are the measures taken for deadlock prevention and deadlock avoidance ?
10. What is revocation ? Briefly outline the methods reacquisition and back pointers.

(10×4=40 Marks)

PART – B

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

Module – I

11. a) Explain in detail about the OS structure. **14**

    b) Write short notes on multiprocessor systems. **6**

OR

12. a) Compare between linked and indexed allocation of space for files. Give examples for both. **12**

    b) What are the methods used for free-space management ? **8**

P.T.O.

Module – II

13. a) Explain any two preemptive CPU scheduling algorithms, with example. 10

    b) Write the solution for dining-philosopher problem using monitor. 10

OR

14. a) Consider the segment table

Segment	Base	Length
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the physical addresses for the following logical addresses ? 10

i) 0,430 ii) 1,10

iii) 1,11 iv) 2,500

v) 3,400 vi) 4,112

b) What is critical-section problem ? What are the three requirements that a solution to the critical section problem should satisfy ? 10

Module – III

15. a) What are the necessary conditions for deadlock ? 6

    b) What do you mean by safe and unsafe state ? 4

    c) Explain about Banker's algorithm. 10

OR

16. a) Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143 and the previous request was at cylinder 125. The queue of pending requests in FIFO order is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130.

    Starting from the current disk position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk scheduling algorithms : FCFS, SSTF, SCAN, LOOK, C-SCAN. 15

    b) Write short notes on protection domain. 5