



Reg. No. :

Name :

Fourth Semester B.Tech. Degree Examination, May 2010

(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. Define the essential properties of multiprocessing OS.
2. What are the on-disk and in-memory structures used in file system design ?
3. What is the use of system-wide open file table ?
4. What is convoy effect in resource scheduling context ?
5. Write short notes on demand paging.
6. What is the function of dispatcher ?
7. Why are segmentation and paging schemes sometimes combined in to one scheme ?
8. What is the drawback of resource allocation graph algorithm in handling deadlocks ?
9. Define I/O traffic controller and I/O scheduler.
10. What is the use of channel control units ?

(10×4=40 Marks)

P.T.O.



PART – B

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

Module – I

11. a) What are the methods available to protect the files against physical damage and improper access ? 8
- b) Write short notes on various file access methods. 12

OR

12. a) Describe the following memory allocation algorithms : 6
- i) First-fit
- ii) Best-fit
- iii) Worst-fit.
- b) Explain the contiguous allocation method of files. What are its advantages and disadvantages ? 14

Module – II

13. Consider the following set of process.

Process	Arrival Time	Burst Time	Priority
P ₁	0	16	3
P ₂	1	2	2
P ₃	3	4	4
P ₄	5	3	1

(The highest priority is 1. The lowest is 5)

Draw the Gantt chart and compute the average turn-around time and average waiting time for FCFS, SJF, preemptive priority and round robin scheduling.

(Time slice = 2 ms).

20

OR



14. a) Explain the paging hardware with TLB in detail. 10
- b) Consider the following reference string
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 2
What is the page fault rate for this reference string if we use a FIFO, LRU and optimal page replacement algorithms with four page frames ? 10

Module – III

15. a) What are the functions of device management ? 5
- b) Explain in detail about deadlock detection algorithm. 15
- OR
16. a) Discuss various disk scheduling algorithms with example. 14
- b) Write short notes on access matrix. 6
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