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Total No. of Questions : 09

B.Tech.(CSE/IT) (Sem.-4th) (2011 Batch)

OPERATING SYSTEMS

Subject Code : BTCS-401

Paper ID : [A1183]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. **Write short notes on :**
 - a. Give at least three different views of Operating System.
 - b. What would be the effect of the system running too many I/O jobs?
 - c. Differentiate between multiprogramming and Time sharing systems.
 - d. What is logical address space?
 - e. What is demand paging?
 - f. How are critical regions and the principle of mutual exclusion related to each other?
 - g. What is multitasking operating system?
 - h. What would be the effect, using the FCFS Scheme, if the running process got stuck in an infinite loop?
 - i. With respect to the Round Robin scheduling scheme, discuss the factors, which determine the ideal value for the time quantum.
 - j. What do you understand by Encryption?

SECTION-B

2. Distinguish between preemptive and non-preemptive scheduling policies.
3. What is the critical section problem? How is it handled?
4. Write a shell script (in Unix) that prints all the contents of some existing text file in upper case.
5. How memory management is done in case of Unix? Explain .
6. Describe using a diagram how a logical address consisting of 24 bits could be converted into a segment address supporting upto 256 segments. What would be the maximum size of each segment?

SECTION-C

7. Suppose that the head of moving head-disk with 200 tracks , numbered 0 to 199, has just finished a request at track 125. The queue of the requests is kept in FIFO order:
86, 147, 91, 177, 94, 150, 102, 175, 130.
What is the total number of head movements needed to satisfy requests for the following disk Scheduling algorithms :
 - (i) FCFS
 - (ii) SSTF
 - (iii) Scan
8. (i) What is round robin scheduling ? Explain taking any example. Can it be useful for a single user system? If yes, then explain . If no, then why not?
(ii) Explain the various Directory structure used in operating system for storing files. Give Merits and demerits of all directory structure.
9. What is an Operating System? Discuss in detail how the operating system can be classified into different categories.