

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2125)

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M. Tech 1st Semester Examination
Operating System and Case Study (NS)
CSE1-515/MT-105

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting one question from the sections A, B, C and D. Section E is compulsory.

SECTION - A

1. Discuss the major features of following types of operating systems:
 - (a) Parallel Systems
 - (b) Real Time Systems (20)
2. How CPU scheduling is carried out? Discuss the Round Robin and Priority Scheduling algorithms. (20)

SECTION - B

3. (a) Explain the classical problem of synchronization. How critical regions and critical section problem can be used for Process synchronization? (10)
- (b) What is the need of page replacement algorithm? Discuss the FIFO and Optimal Page replacement algorithm. (10)

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4. Differentiate the following:
 - (a) Demand Paging and Segmentation.
 - (b) Deadlock Detection and deadlock recovery. (20)

SECTION - C

5. Discuss the following types of File Access methods:
 - (a) Sequential Access.
 - (b) Indexed Access. (20)
6. Describe the FCFS and C-SCAN disk scheduling algorithm along with the illustration. (20)

SECTION - D

7. What are the major threats to the security of the system? Discuss the role of threat monitoring and encryption. (20)
8. How Process management is carried out in UNIX Operating System? Discuss the role of Process Control Block. (20)

SECTION - E

9. (a) Discuss the different operations on Processes.
- (b) How threads are used for interprocess communication?
- (c) Explain the concept of fragmentation.
- (d) What is the role of Linear List?
- (e) Define the role of Fault tolerance. (4×5=20)