

Roll No.

22639

**M. Tech. 1st Semester (CSE) CBCS
Scheme Examination – January, 2023**

ADVANCED OPERATING SYSTEMS

Paper : MTCSEF21C2

Time : Three Hours] [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*.

1. Write short notes on the following : 5 × 4 = 20
- (a) Axiomatic Verification of Parallel Programs
 - (b) Vector Clock
 - (c) Check pointing in Distributed Database System
 - (d) Threads

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UNIT - I

2. What is an Operating System ? Explain the various types for Advanced operating system in detail. 20
3. (i) Differentiate between Consumable and re-usable Resources. 10
(ii) Explain the Process deadlock and Models of deadlocks in detail. 10

UNIT - II

4. Explain the following :
 - (a) Non-Token Based Algorithms 10
 - (b) Lamport's Algorithm -Token-Based Algorithms 10
5. What is Distributed File System ? Explain its architecture and Design issues in detail. 20

UNIT - III

6. What is Recovery ? Explain the basic approaches to recovery in detail. 20

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7. Write short notes on the following :

- (a) Dynamic Voting Protocol 7
- (b) Two-phase commit protocols 7
- (c) Fault Tolerance 6

UNIT - IV

8. Explain the concept of Concurrency Control. Describe the various Concurrency Control Algorithms in detail. 20
9. (i) What is Process synchronization ? Explain by taking suitable example. 10
(ii) Explain various design issue of Multiprocessor Operating System. 10

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