

7. (a) Explain Rollback recovery algorithm. (10)
- (b) Explain checkpointing in distributed database systems. (10)

SECTION

8. What is thread ? Explain various levels of thread with its advantages and disadvantages. (20)
9. (a) Discuss problems of concurrency control. (10)
- (b) Explain basic structures of multiprocessor operating system. (10)

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Roll No.

22639

**M.Tech. 1st Semester (CSE)
CBCS Scheme Examination-
December, 2016**

ADVANCED OPERATING SYSTEMS

Paper : MTCSE-21C2

Time : 3 hours

Max. 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 the examination.

Note : Q. No. 1 is **compulsory**. Attempt **one** question from each Section.

1. (a) Explain static vs dynamic voting.

(5 × 4 = 20)

- (b) What do you understand by memory coherence ?

- (c) Explain critical section problem.
- (d) Define cut of distributed computation.
- (e) Explain system failure.

SECTION -

- 2. What is monitor ? How do monitors work ?
Implement reader/writer problem using monitors. Also write its advantages and disadvantages. (20)
- 3. (a) Write necessary and sufficient conditions for deadlock to happen. (10)
(b) Explain various types of advanced operating systems. (10)

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SECTION - B

- 4. Define lamport's "happened before relation" in context of logical clocks. Explain how relation can be realized using logical clocks. What are the limitations of lamport's clock ? (20)
- 5. (a) Explain Birman-Schiper Stephenson protocol. (10)
(b) Explain an Edge chasing algorithm. (10)

SECTION - C

- 6. (a) Explain two phase commit protocol. (10)
(b) Explain nonblocking commit protocol for single site failure. (10)