

GUJARAT TECHNOLOGICAL UNIVERSITY
ME(CE-SE) - SEMESTER-I • EXAMINATION – WINTER 2014

Subject Code: Distributed Operating System

Date: 12/01/ 2015

Subject Name: 2710213

Time:

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) List out issues in designing a distributed operating system and explain transparency in detail. **07**
(b) What is callback RPC? Give an example of an application where this facility may be useful. What are the main issues involved in it? Describe a mechanism to handle each of these issues. **07**

- Q.2** (a) The operations performed by the server are non-idempotent. Describe a mechanism for implementing exactly-once IPC semantics in this case. **07**
(b) Draw the ATM protocol reference model and explain its ATM layer in detail. **07**

OR

- (b) Define 'clock skew' Explain Global averaging distributed algorithm for clock synchronization. **07**
Q.3 (a) Explain the probe based distributed algorithm for deadlock detection. **07**
(b) Explain the following call semantics:
(1) Last One
(2) At least once
(3) Exactly once

OR

- Q.3** (a) Which are the different techniques to avoid deadlock in Distributed Operating System? **07**
(b) Explain the following two consistency models: **07**
(1) Casual consistency model
(2) Processor consistency model

- Q.4** (a) What is 'Thrashing' in a distributed shared memory system? What are the commonly used methods to solve the thrashing in DSM system? **07**
(b) Explain the issues in designing load-sharing algorithms. **07**

OR

- Q.4** (a) Explain data locating techniques in RMBs strategy with block table in sequential consistency model. **07**
(b) List out issues in designing a thread package and explain Threads Scheduling in detail. **07**
Q.5 (a) Explain the address space transfer mechanism for process migration in brief. **07**
(b) What is multiple copy update problem in distributed file system? Explain the commonly used approaches to handle this issue. **07**

OR

- Q.5** (a) Explain the file caching schemes in distributed file systems. **07**
(b) Write the comparison between Amoeba, Mach and Chorus distributed operating **07**
) systems.
