

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2013****Subject code: 710103N****Date: 04-06-2013****Subject Name: Distributed Operating System****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Draw neat sketches wherever required.

Q.1 (a) What is stub? Explain how a stub can be generated? Explain how stub helps in making RPC mechanism transparent. **07**

(b) List out the main guideline principles that a distributed operating system designer must keep in mind for the good performance of his or her system. **07**

Q.2 (a) Explain advantages and disadvantages of using full file caching and block caching model for data caching mechanism of a distributed file system. **07**

(b) List out the differences between Berkeley Algorithm and Cristian's Algorithm for clock synchronization. Also list any one application where clock synchronization plays a vital role. **07**

OR

(b) Define internetworking. List out the main issues in Internetworking. Explain difference between the following terms: Bridge, Router, and Gateway. **07**

Q.3 (a) Explain the issues in designing a Threads Package. **07**

(b) Differentiate between replication and caching. Explain potential benefits of file replication. **07**

OR

Q.3 (a) Explain the Polling methods and Interrupt Methods in IPC Synchronization. **07**

(b) List out the differences between stateful and state less server. What is advantage of using state less servers as compared to stateful server? **07**

Q.4 (a) Name the main components of a distributed file system. What might be the reason for separating the various functions of distributed file system into these components? **07**

(b) Describe the functionalities of the different layers of the ATM protocol reference model. **07**

OR

Q.4 (a) What is process migration? Explain the Address space transfer mechanism for process migration in brief. **07**

(b) Define a deadlock. List and explain the four necessary conditions for dead lock to occur with a suitable example. **07**

Q.5 (a) Distributed shared memory is suitable for which environment LAN or WAN or both? Justify the same. **07**

(b) List out the differences between a port address, a logical address, and a physical address. **07**

OR

Q.5 (a) Write Short Notes on: **07**

(i) Bullet Server Implementation. (ii) Thread scheduling in Mach.

(b) Explain the System Architecture and features of Chorus Distributed Operating System. **07**
