

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 710103N**Date: 09-01-2013****Subject Name: Distributed Operating Systems****Time: 02.30 pm – 05.00 pm****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) Explain features of RPC model. What do you mean by marshaling process in RPC and also give RPC message format? **07**
- (b) What do you mean by process migration? Discuss the advantages & disadvantages of process migration. **07**
- Q.2** (a) Discuss the main guideline principles that a distributed operating system designer must keep in mind for the good performance of his or her system. **07**
- (b) What is meant by internetworking? What are the main issues in internetworking? Explain difference between the following terms: Bridge, Router, and Gateway. **07**
- OR**
- (b) Explain Ricart and Agrawala's distributed algorithm for mutual exclusion with suitable example & also discuss its limitations. **07**
- Q.3** (a) What is stub? How are stubs generated? Explain how the use of stub helps in making an RPC Mechanism transparent. **07**
- (b) Discuss the difference between Cristian's & Berkeley Algorithm for clock synchronization also give one application where clock synchronization plays important role. **07**
- OR**
- Q.3** (a) Describe blocking and nonblocking types of IPC. Which is easier to implement and why? Discuss their advantages and disadvantages. **07**
- (b) What is deadlock? What are four necessary conditions for a deadlock to occur? How probe based distributed algorithm works? **07**
- Q.4** (a) Discuss the relative advantages and disadvantages of various system models of distributed systems. Which model do you think is going to become more popular model in future? Give reason for your answer. **07**
- (b) What is Thread? Describe the various approaches available to implement thread package. **07**
- OR**
- Q.4** (a) Explain general structure of shared memory space and sequential consistency model. **07**
- (b) Explain architecture of DSM system. Also discuss important issues involved in design and implementation of DSM. **07**
- Q.5** (a) What is difference between replication and caching? Explain potential benefits of file replication. **07**
- (b) What are possible cache locations for file cache scheme in distributed file system? Discuss advantages of each. **07**
- OR**
- Q.5** (a) Compare AMOEBA, MACH, CHORUS in terms of Interprocess communication, memory management, and kernel. **07**
- (b) Describe process model of Amoeba. **07**
