Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 710103N **Date: 2-12-2014**

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.**

Q.1 **(a)** Answer following

1. What is stub? What are the different ways to generate it? **02**
2. In one-to-many communication, give an example of 1-reliable and all- reliable reliability. **02**
3. What are the advantages of processor pool model over workstation server model? **03**

(b) What is transparency? Explain any five types of transparency briefly with reference to Distributed Operating System. **07**

Q.2 **(a)** Explain implementation of RPC mechanism. **07**

(b) Answer following

1. Explain : "Stateless server is easy to implement in comparison with stateful server" **04**
2. Differentiate: NOS and DOS **03**

OR

(b) What is idempotency? Explain with example, how it can be achieved. **07**

Q.3 **(a)** Explain client-server binding mechanism in detail. **07**

(b) Explain consistent ordering and causal ordering semantics for ordered delivery of multicast messages. Write an algorithm for any one. **07**

OR

Q.3 **(a)** Write a program using utility rpcgen to find maximum of two numbers. Write specification file, client program and a remote procedure. Also show the sequence of commands for compiling and running the program. **07**

(b) Write short note on: Process Migration. **07**

Q.4 **(a)** Discuss various file sharing semantics in distributed file systems. **07**

(b) Write short note on: replicated, migrating blocks(RMBs) **07**

OR

Q.4 **(a)** Write short note on: Non-replicated, migrating blocks(NRMBs) **07**

Q.4 **(b)** Answer following:

1. What is thrashing? How to solve it? **04**
2. What is deadlock? What are the necessary conditions for deadlock to occur? **03**

Q.5 **(a)** What are the different approaches for choosing a coordinator? Explain any one approach in detail. **07**

(b) Answer following:

1. What is a thread? What are its advantages? **04**
2. Discuss models for organizing threads. **03**

OR

Q.5 **(a)** Answer following:

1. Give comparison of centralized and distributed load balancing algorithms. **04**
2. What are the main differences between the load balancing and load sharing approaches for process scheduling in distributed systems? **03**

(b) Answer following:

1. Write short note on: AMOEBA. **04**
2. Compare micro and monolithic kernel models. **03**

****