

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA - SEMESTER-IV • EXAMINATION – SUMMER 2017**

**Subject Code : 640006****Date: 08/06/2017****Subject Name: Distributed Computing (DC1)****Time: 10.30 AM TO 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) Attempt the following 07**
- i. A basic multicasting mechanism is \_\_\_\_\_ .
  - ii. SETI is an example of \_\_\_\_\_ computing.
  - iii. Most abstract of the object oriented paradigm is \_\_\_\_\_.
  - iv. When Communication from one process to single other process, the IPC is said to be a \_\_\_\_\_.
  - v. CORBA is abbreviated as \_\_\_\_\_.
  - vi. Justify why security concern is disadvantage of distributed computing.
  - vii. An unthreaded connection-oriented server is said to be \_\_\_\_\_ server.
- (b) Explain Inter-Process Communication. Discuss event synchronization in the following modes of IPC. 07**
- i. Asynchronous Send and Asynchronous Receive
  - ii. Synchronous Send and Asynchronous Receive
- Q.2 (a) Suppose following events takes place in chronological order in a multicast group participated by three processes P1,P2 and P3: 07**
- P1 multicast m1.  
P2 responds to m1 by multicasting m2.  
P3 multicast m3 spontaneously.  
P1 responds to m3 by multicasting m4.  
P3 responds to m2 by multicasting m5.  
P2 multicast m6 spontaneously.  
List what are the scenario are permitted for multicasting?
- (b) Explain Mobile Agent Paradigm and Client Server Paragdigm 07**
- OR**
- (b) Explain Peer to Peer Paradigm and Message System Paradigm. 07**
- Q.3 (a) What is reliable multicasting? Discuss classification of reliable multicast systems. 07**
- (b) What is concurrent Server? Write a Concurrent Daytime Server program using Stream Socket API. 07**
- OR**
- Q.3 (a) Explain with complete example program: How to 07**
- I. Join to a multicast group?
  - II. Send and Receive a DatagramPacket to a multicast group?
- (b) According to three layer software architecture, explain echo client-server using TCP with UML diagram and program flow. 07**

- Q.4 (a)** Write a program which sends a message and receives a message using connectionless datagram socket. **07**
- (b) I.** Explain how hidden form-fields can be used for transferring session state data. **04**
- II.** Differentiate Stateful Server vs Stateless Server **03**
- OR**
- Q.4 (a)** With Diagram and code fragment, explain connection oriented stream socket. **07**
- (b) I.** Discuss how to transfer session state data using cookie **04**
- II.** Discuss reasons for popularity of distributed computing **03**
- Q.5 (a)** Discuss the basic architecture of CORBA, its object interface, object references, server and clients in detail with diagram. **07**
- (b)** What is RMI? With suitable example discuss the implementation of Java RMI on server. (With Steps for building an RMI Application). **07**
- OR**
- Q.5 (a)** Compare SOAP Web Services and RESTful Web Services with Example. **07**
- (b) I.** What is RMI? Describe java RMI Architecture. What is the role of rmiregistry? **04**
- II.** What is WSDL? Explain role of WSDL in SOA. **03**

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