

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- IV • EXAMINATION – WINTER 2015

Subject Code : 640006

Date:09/12/2015

Subject Name : Distributed Computing (DC1)

Time:10.30 a.m.To 01.00 p.m.

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) State True/False. 07

- i. A monolithic computing makes use of a single central processing unit (CPU) to execute one or more programs for each application.
- ii. Asynchronous operation can be issued by a process when that process may proceed without waiting for the completion of the event that the operation initiates.
- iii. In basic socket APIs whether connection-oriented or connectionless, the send operations are blocking while receive operations are nonblocking.
- iv. A concurrent server is capable of conducting multiple client sessions in parallel.
- v. The distributed objects paradigms is data oriented.
- vi. CORBA is not in itself a distribute object facility; instead, it is a set of protocols.
- vii. SOAP messages are encoded in HTML for interoperability.

(b) Define Following terms. 07

- i. Data marshalling
- ii. Collaborative Application Paradigm
- iii. Secure Socket Layer(SSL)
- iv. Latency
- v. Session state data
- vi. Object Adapters
- vii. XML Schema Data types

Q.2 (a) Explain Program flow of sender & receiver process using connectionless datagram socket. List methods of DatagramPacket class and DatagramSocket class. 07

(b) What do you mean by indefinite blocking? Discuss the event synchronization in different modes of IPC. 07

OR

(b) Discuss in detail, How message passing paradigm is different than the distributed object paradigm? 07

Q.3 (a) i. Discuss three-tier software architecture for client-server software. 04
ii. Write a short note on peer-to-peer paradigms. 03

(b) List the JAVA classes that support basic multicast. Also explain the major methods of those classes that can be used for the implementation of multicast. 07

OR

- Q.3 (a)** Explain and Differentiate the following. **04**
- i. Iterative server and Concurrent Server **03**
 - ii. Stateful server and Stateless Server **07**
- (b)** Explain various classifications of multicasting mechanisms on the basis of their characteristics of message delivery. **07**
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- Q.4 (a)** Write a short note on java RMI architecture and show stub & skeleton interactions using an appropriate diagram. **07**
- (b)** Explain how Hidden form fields can be used for transferring session state data. Explain security concerns with reference to cookies and hidden form fields. **07**
- OR**
- Q.4 (a)** What is the role of RMI registry on server-side and client-side? Explain the tradeoffs between RMI API and Socket API. **07**
- Q.4 (b)** Explain how cookies can be used for transferring session state data. What are the pros and cons of cookies? **07**
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- Q.5 (a)** Discuss the basic CORBA architecture using an appropriate diagram. **07**
- (b)** What is SOAP? Explain the layout of SOAP request. Discuss the important classes from Apache SOAP. **07**
- OR**
- Q.5 (a)** Which tools are provided by Java IDL to develop a CORBA application? List and explain the use of the files that are normally created in a CORBA application developed using Java IDL. **07**
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- (b)**
- i. Explain what is REST? Explain any three basic principals possessed by RESTful service. **04**
 - ii. Explain the following with respect to Java Annotations. **03**
 - a. @webservice
 - b. @webmethod
 - c. @webResult
