

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA SEM-IV Examination- Dec.-2011

Subject code: 640006

Date: 22/12/2011

Subject Name: Distributed Computing (DC1)

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)** Fill in the blanks: **07**
- (i) _____ is a protocol that makes a use of HTTP requests and response to affect the remote method call to web services.
- (ii) Tools provided for developing a CORBA application include _____ and _____.
- (iii) The _____ allows a document to be marked up for structured information.
- (iv) _____ protocol is a protocol to augment HTTP in supporting runtime generated web content.
- (v) Basic _____ is is connectionless and unreliable.
- (vi) _____ allows the processes involved to execute independently, with no knowledge of what takes place at other end.
- (vii) The _____ layer provides data access support, directory support and inter process communication.
- (b)** Write True/False: **07**
- (i) An event diagram can be used to document the detailed sequence events and blocking of protocol.
- (ii) The receive (read) and the connection accept operations are unblocking.
- (iii) Each process must create a DatagramSocket object to send or receive datagram.
- (iv) The message passing paradigm is at a higher level of abstraction as compared to distributed object paradigm.
- (v) Stub downloading allows a stub class to be loaded to an object client at syntax time.
- (vi) A session object implements HttpSession interface.
- (vii) Java RMI is representative of distributed object system.
- Q.2 (a)** Describe the java RMI architecture. What is the role of RMI registry? **07**
- (b)** i) Discuss the program flow in a connection listener and a connection requester. **04**
- ii) Differentiate Stateless Server and Stateful server. **03**

OR

- (b)** i) Discuss the need and protocol required generate web contents dynamically. **02**
- ii) Discuss the SOAP Model. How request handled by SOAP? **05**
- Q.3 (a)** Discuss the inter process communication and event synchronization **07**

in the client server model.

- (b) What do you mean by Datagram Socket Application Programming interface? Discuss all datagram sockets available with the help of classes. **07**
- OR**
- Q.3** (a) Compare and contrast the message passing paradigm with the distributed object paradigm. **07**
- (b) Explain and Differentiate the following: **07**
- i) Connectionless versus Connection oriented Multicast
 - ii) Reliable Multicasting Versus Unreliable Multicasting
- Q.4** (a) (i) Discuss the event diagram for an HTTP session **03**
- (ii) Discuss Asynchronous send and Asynchronous receive. **04**
- (b) Discuss the strength and weaknesses of Distributed Computing. **07**
- OR**
- Q.4** (a) Discuss the basic architecture of CORBA, its object interface, protocols, object references, server and clients in detail with diagram. **07**
- (b) Describe the three tier software architecture for client server software. Briefly explain the functionalities of each layer on each side. Why is it advantageous to encapsulate the logic of separate layers in separate software modules? **07**
- Q.5** (a) Write a program which sends a message and receives a message using connectionless datagram socket. **07**
- (b) Write a short note on: **07**
- i) Cookies for transferring session state data
 - ii) Compiling and running a java IDL application
- OR**
- Q.5** (a) Write a program which uses a multicast socket to sends a single message to a multicast group and joins a multicast group and receives a single message send to the group. **07**
- (b) Write a short note on the following: **07**
- i) Concurrent Programming
 - ii) The internet network architecture
