

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-VI • EXAMINATION – SUMMER 2013

Subject Code: 640006**Date: 31-05-2013****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) Explain following: **07**
1. Monolithic Computing
 2. Distributed Computing
 3. Parallel Computing
 4. Cooperative Computing
- (b) For an HTTP session draw and explain sequence diagram and event diagram. **07**

- Q.2** (a) Process A sends a single message to process B using connectionless IPC. **07**
To do so, A issues a send operation (specifying the message as argument) sometime during its execution, and B issues a receive operation. Suppose the send operation is blocking and the receive operation is non-blocking. Draw and explain an event diagram (not sequence diagram) for each of the following scenario:
1. Process-A issues its send operation prior to process B issues its receive operation.
 2. Process-B issues its receive operation prior to process A issues its send operation.
- (b) Explain the Message Passing paradigm & Mobile Agent paradigm with suitable figures. **07**

OR

- (b) With code snippet explain sending message to multicast group and receiving message from multicast group. **07**
- Q.3** (a) Write a Java code fragment that may appear in a main method to open a datagram socket for receiving a datagram of up to 100 bytes, timing out in 5 seconds. If a timeout does occur, a message “timed out on receive” should be displayed on screen. **07**
- (b) Write a program which sends a message and receives a message using connectionless datagram socket. **07**

OR

- Q.3** (a) Write and explain datagram socket code fragment which will generate `IllegalArgumentException`. **07**
- (b) Write and explain a simple DayTime client-server program using Stream socket API. **07**

- Q.4** (a) Explain three tier software architecture for client server and discuss its advantages. **07**
- (b) Explain algorithms for server-side and client-side software of RMI application. **07**

OR

- Q.4** (a) Explain steps to compiling and running a Java IDL Application. **07**
- Q.4** (b) How cookies can be used for transferring session state data? Draw and explain appropriate event/interaction diagram. **07**
- Q.5** (a) Draw and explain basic CORBA architecture. **07**
- (b) With suitable example, explain WSDL document structure. **07**
- OR**
- Q.5** (a) List and explain various CORBA object services. **07**
- (b) Explain Shortcoming of JAX-WS 2.0 dispatching for SOA integration. **07**
Also discuss working around dispatching limitation.
