Seat No.: _____ Enrolment No._____

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. 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: **07**

1. Process-A issues its send operation prior to process B issues it's receive operation.
2. Process-B issues it's 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. Also discuss working around dispatching limitation.	**07**

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