Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– II(Old course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 1720102   **Date: 10/12/2015**
Subject Name: Distributed Computing & Application
Time:2:30 pm to 5:00 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)** In a distributed system, three processes P1, P2 and P3 are engaged in IPC. Suppose the following sequence of events occurred:
At time t1, P3 issues a receive from P2,
At time t2, P1 sends m1 to P2,
At time t3, P2 issues a receive from P1,
At time t4, P2 receives m1,
At time t5, P2 sends message m1 to P3,
At time t6, P3 receives m1, and P1 issues a receive from P2,
At time t7, P2 issues a receive from P3,
At time t8, P3 sends m2 to P2,
At time t9, P2 receives m2,
At time t10, P2 sends m2 to p1,
At time t11, P1 receives m2.
Draw an event diagram to show the sequence of events on a communication system that provides blocking for the send operations and blocking receive operations.   **07**

(b) Illustrate with proper example how RMI differ from RPC. , Is RPC and RMI action oriented or data oriented? How?   **07**

Q.2 **(a)** Draw and explain the J2EE architecture. What are its major components and services?   **07**

(b) List different paradigms for Distributed Applications. Explain Mobile agent paradigm basic architecture and advantages of this paradigm.   **07**

OR

(b) Explain Stub downloading and need of policy file with reference to RMI.   **07**

Q.3 **(a)** Draw and Explain the life cycle of Servlet.   **07**
(b) For client server architecture, explain the Three Tire Architecture. Explain functionalities of each layer.   **07**

OR

Q.3 **(a)** Write a servlet to generate first N prime numbers. Value of N is given by user. Write required HTML files also.   **07**
(b) Explain with proper example, reading of metadata in JDBC.   **07**

Q.4 **(a)** What is web.xml file? Explain its role with sample web.xml file.   **07**
(b) Write a Servlet and other related files to count number of characters in a given input string.   **07**

Q.4 **(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 õtimed out on receiveö should be displayed on screen. **07**

Q.4 **(b)** Explain the need of session handling with suitable example. **07**

Q.5 **(a)** How Distributed Computing differs from Parallel Computing? What is MPI and what is its role? **07**

(b) What are the main strengths and weaknesses of CORBA with comparison to Java RMI? **07**

OR

Q.5 **(a)** What is DTD? Explain with suitable example how to refer DTD file in XML file. **07**

(b) How can we use JMS to develop Publish Subscribe model? **07**

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