Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

VII SEMESTER B.TECH (COMPUTER SCIENCE AND ENGINEERING)

MAKE-UP EXAMINATIONS, DEC 2015/JAN 2016

SUBJECT: DISTRIBUTED COMPUTING SYSTEMS (CSE-401)

REVISED CREDIT SYSTEM

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ANY FIVE FULL** questions.

❖ Missing data, if any, may be suitably assumed.

1A. Explain the failure model of a distributed system.   **5M**

1B. With an example explain common data representation (CDR) in CORBA.   **3M**

1C. Explain the design choices that are relevant to minimizing the amount of reply data held at the server.   **2M**

2A. Briefly explain how server handles the following design issues

    i)   End point advertisement

    ii)   Multiple clients requests.   **5M**

2B. Explain an algorithm for distributed garbage collection.   **3M**

2C. Discuss the working of client side caching in NFS.   **2M**

3A. With diagrams explain how authentication and setting up of a secured channel handled in Kerberos.   **5M**

3B. Explain the following with respect to Domain name Service (DNS).

    i) Name space   ii) Aliases   **3M**

3C. Give the DNS name server architecture for managing the domain cse.mit.manipal.ac.in (i.e all names in the computer science dept of MIT).   **2M**

4A. With an example explain how vector clock enforce causal ordering.   **5M**

4B. Compare the Centralized, Distributed , and Token ring mutual exclusion algorithms. **3M**

4C. Suppose that two processes detect the demise of the coordinator simultaneously and both decide to hold an election using the bully algorithm. What happens?   **2M**

5A. Explain the working of primary back up remote write consistency model. **5M**

5B. With a diagram explain monotonic read client centric consistency model. **3M**

5C. It is often argued that weak consistency models impose an extra burden for programmers. Why? **2M**

6A. With state diagrams explain the working of two phase-commit protocol for distribute commit **5M**

6B. With diagrams explain feedback suppression and hierarchical feedback control methods to address scalability in reliable multicasting. **5M**