(MCTA—205)

M. E./M. Tech. (Second Semester)

EXAMINATION, June, 2011

(Grading/Non-Grading)

DISTRIBUTED SYSTEM

(MCTA—205)

Time : Three Hours

Maximum Marks { GS : 70
NGS : 100

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Describe the various RPC protocols supporting client server communication.

   (b) Explain the two different approaches to external data representation and marshalling.

2. (a) How does communication between distributed objects take place ? Describe the related issues.

   (b) Consider a simple server that carries out client requests without accessing other servers. Explain why it is generally not possible to set a limit on the time taken by such a server to respond to a client request. What would need to be done to make the server able to execute requests within a bounded time. Explain.

   P. T. O.

3. (a) What are different elements involved in implementation of R. P. C. mechanism ? Explain the role of each in R. P. C. mechanism.

   (b) What is M. P. I. ? Explain message passing primitives of M. P. I. ?

   (c) Define name spaces and name domains.

4. (a) Explain different transparencies in distributed system with suitable example.

   (b) How would you incorporate persistent asynchronous communication into a model of communication based on R. M. I. s. to remote objects.

5. (a) Describe the architecture for multithreaded servers. Discuss the issues related to thead programming, thread life, time, thread synchronisation, scheduling and implementation.

   (b) What is global state of a distributed system and explain how it can be represented ?

6. (a) Explain the Chandy and Lamport's snapshot algorithm for determining the global states of distributed system

   (b) Consider the behaviour of two machines in a distributed system. Both have clocks that are supported to tick 1000 times per millisecond. One of them actually does, but the other ticks only 990 times per millisecond. If UTC updates come in once a minute, what is maximum clock skew that will occur ?

7. (a) Discuss about the various methods for recoverability from aborts of a number

   (b) Explain flat and nested distributed transactions br