Reg No.										

MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University)
MANIPAL-576104

SEVENTH SEMESTER B.E (CSE) DEGREE EXAMINATION
SUBJECT: DISTRIBUTED SYSTEMS **(CSE-401)**
30-11-2010
(REVISED CREDIT SYSTEM)

TIME : 03 HOURS MAX.MARKS : 50

Instructions to Candidates

- Answer ANY FIVE FULL questions.
- Missing data can be suitably assumed.

1A. Give five types of hardware resource and five types of data or software resource that can usefully be shared. Give examples of their sharing as it occurs in distributed systems. (5)

1B. While designing a distributed system what are the challenges that the designer needs to consider Explain in detail. (5)

2A. A search engine is a web server that responds to client requests to search in its stored indexes and (concurrently) runs several web crawler tasks to build and update the indexes. What are the requirements for synchronization between these concurrent activities? (4)

2B. List out the variation on the client-server model. What is a difference between mobile agents and thin client ? (3)

2C. What factors affect the responsiveness of an application that accesses shared data managed by a server? Describe remedies that are available and discuss their usefulness (3)

3A. Assume the RRA protocol is in use. How long should servers retain unacknowledged reply data? Should servers repeatedly send the reply in an attempt to receive an acknowledgement? (3)

3B. Explain remote object reference and state its importance. What is use of reflection . (2)

3C. What do you mean by stream communication and discuss the issues related to stream communication (3)

3D. Define the semantics for and design a protocol for a group form of request-reply interaction, for example using IP multicast. (2)

4A. With a neat diagram discuss in detail the working mechanism of RPC. (5)

4B. Discuss in details the file service architecture with a neat diagram. (5)

5A. What thread operations are the most significant in cost?

(2)

5B. Discuss in details the core operating system functionality with a neat diagram.

(3)

5C. What do you mean by the term distributed transaction? Discuss the difference between flat and nested transaction.

(3)

5D. Why do DNS root servers hold entries for two-level names such as ac.uk and purdue.edu, rather than one-level names such as uk, edu and com?

(2)

6A. Write short notes on the following:

(a) Feedback implosion
(b) Byzantine general problem

(4)

6B. What do you mean by the term data store. How sequential consistency is different from lineraizable consistency?

(3)

6C. What do you mean by happened before relationship? Explain how the happened before relationship is represented by Lamport logical clock and vector clock with an example.

(3)

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