

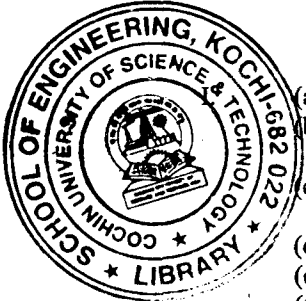
B. Tech Degree VII Semester Examination, November 2009**CS/IT 704 DISTRIBUTED COMPUTING***(2006 Scheme)*

Time : 3 Hours

Maximum Marks : 100

PART A(Answer ALL questions)(All questions carry EQUAL marks)

(8 x 5 = 40)

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- (a) Compare client-server architecture and peer-peer architecture.
 (b) What do you mean by marshalling and unmarshalling of data? Explain the need for the same.
 (c) What are idempotent functions? List a few applications of idempotent functions in distributed systems.
 (d) What are the requirements of a distributed file system?
 (e) Briefly explain the three architecture for multithread servers.
 (f) Describe Cristian's method for synchronising physical clocks.
 (g) Explain ring based election algorithm.
 (h) What do you mean by phantom deadlocks.

PART B

(4 x 15 = 60)

- II. (a) What are the challenges of a distributed system? (6)
 (b) Explain the design and implementation of Remote Method Invocation. (9)
- OR**
- III. (a) Compare UDP and TCP communication protocols. (7)
 (b) Describe the architecture of an event based system with an example. (8)
- IV. (a) Explain the different operating system architectures in distributed system. (7)
 (b) Describe the Sun Network File System in detail. (8)
- OR**
- V. (a) A file server uses caching and achieves a hit rate of 80%. File operations in the server cost 5ms of CPU time. When the server finds the requested block in the cache, and takes an additional 15ms of disk I/O time otherwise. Explaining any assumptions you make estimate the servers throughput capacity for each of the following cases.
 (i) single threaded
 (ii) two threaded running on a single processor
 (iii) two threaded running on a two processor computer. (6)
 (b) Discuss how name-address resolution takes place in a DNS. (9)
- VI. (a) Explain the network time protocol for synchronization. (6)
 (b) What do you mean by distributed mutual exclusion? Discuss two algorithms for mutual exclusion. (9)
- OR**
- VII. (a) Describe in detail the replication techniques used for fault tolerance in distributed systems. (8)
 (b) What is the need for clocks in distributed system? What are the different types of clocks used? (7)
- VIII. (a) What do you mean by a distributed database system? Illustrate with an example. (5)
 (b) Describe the two-phase commit protocol. (10)
- OR**
- XI. (a) What are the different concurrency control techniques in distributed transaction? (8)
 (b) What is a distributed deadlock? Explain its relevance in DDBMS. (7)
