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MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University) MANIPAL576104



SEVENTH SEMESTER B.E DEGREE EXAMINATIONS-2009
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
DISTRIBUTED SYSTEMS [CSE 401]

Note: (i) Answer **ANY FIVE FULL** questions
(ii) All sub questions carries **FIVE** Marks each

TIME: 03 HOURS]

[MAX.MARKS: 50

Q1.

- a) Explain different variations of basic client and server model.
- b) Discuss the various failure models in Distributed Systems.

Q2.

- a) What is the need for External Data Representation in Distributed Systems? Explain CORBA's Common Data Representation(CDR).
- b) Present a Case study of interprocess communication in Unix covering Datagram communication and Stream communication.

Q3.

- a) Explain various RMI invocation semantics and their failure models.
- b) Draw the architecture of distributed event notification and explain the roles of each participating object.

Q4.

- a) A file server uses caching, and achieves a hit rate of 80%. File operations in the server costs 5 ms of CPU time when the server finds the requested block in the cache, and takes an additional 15 ms of disk I/O time otherwise. Explaining any assumptions you make, estimate the server's throughput capacity(average request/sec) if it is
 - (i) single-threaded
 - (ii) two-threaded, running on a single processor.
- b) Explain how authenticated communication with a file server takes place using shared secret key(session key)

Q5.

- a) Explain SUN Network File System Architecture with a neat diagram.
- b) With suitable diagram explain different navigation schemes for name resolution.

Q6.

- a) Explain the lost update problem and inconsistent retrieval problem. How this can be solved? Explain with suitable examples.
- b) What is Distributed Database Management System? What are its components? List the services provided by DDBMS and Discuss the types of access to DDB.
