MCA–505–A (N)

M. C. A. (Fifth Semester)
EXAMINATION, Nov.-Dec., 2007
(New Scheme)
DISTRIBUTED SYSTEMS
(Elective – III)
[MCA – 505–A (N)]
Time : Three Hours
Maximum Marks : 100
Minimum Pass Marks : 40

Note : Attempt any *two* parts from each question. Attempt all questions.

1. (a) What do you understand by transparency of distributed system ? What are the different forms of transparency that are applied to distributed systems ?
   Discuss the scalability problems and techniques to handle them. 10
   (b) Discuss the parameter passing mechanisms used in RPC. Briefly discuss message oriented communication. 10
   (c) Discuss the following : 10
   (i) Data Stream
   (ii) Specifying QOS
   (iii) Token bucket algorithm

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2. (a) Differentiate between the following : 10
   (i) Multithreaded clients and Multithreaded servers
   (ii) Processes and Light weight processes
   (b) Discuss the need, advantages and disadvantages of code migration.
   Differentiate between weak and strong mobility. 10
   (c) What is the concept of logical clocks ? Discuss the Lamport's approach for logical clock synchronization. 10

3. (a) Explain the following type of consistency with suitable example : 10
   (i) Strict consistency
   (ii) Causal consistency
   (iii) Weak consistency
   (b) Write brief notes on the following : 10
   (i) Eventual consistency
   (ii) Process resilience
   (c) Define the following terms : 10
   Public key, Private key, Session key, Symmetric key and explain with the help of a block diagram how authentication takes place in KERBEROS.

4. (a) Discuss the object model of CORBA and discuss the service provided by CORBA system. 10
   (b) Briefly present the evolution stages of DCOM. How communication takes place in DCOM ? Discuss in detail. 10
   (c) What is the difference between stateless and stateful servers ?
   Discuss the file system model, processes and naming in Sun network file system. 10

5. (a) What are DSM servers ? Write their advantages and limitations. 10
   (b) Discuss in detail how web acts as a distributed system ? 10
   (c) Explain the notion of co-ordination in distributed systems and present an overview of JINI. 10