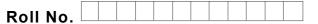
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M.Tech.(CSE Engg.) / (E-Security) (Sem.-2) DISTRIBUTED SYSTEMS Subject Code : CS-504 Paper ID : [E0684]

Time: 3 Hrs.

Max. Marks: 100

INSTRUCTION TO CANDIDATES :

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carries TWENTY marks.
- Q1) Describe the architectural model of a Distributed System along with its characteristics. Comment and compare transparency and scalability in centralized and distributed systems.
- Q2) a) Define the term marshaling and its role in communication among processes. Differentiate between Client-server communication and Group Communication.
 - b) How inter-process communication takes place in distributed systems? Discuss various design issues for remote method invocation (RMI).
- Q3) Describe the interface to the election service in CORBA IDL and Java RMI. Also, compare the methods used in both languages to specify input and output arguments.
- Q4) Explain the concept of name resolution and domain name system with an example. Differentiate directory and discovery services with their key characteristics.
- Q5) a) Take an application example and show a deadlock condition. Also, explain how deadlocks are occurred and recovered in the distributed systems,
 - b) Distinguish the working of all the locking protocols used in distributed transactions. Mention the advantages and disadvantages of locking protocols.
- Q6) Discuss, in detail, the operating system architecture and its layers along with the concept of processes and threads.
- Q7) Describe the concept of stream adaptation and Quality of Service management and Resource management with respect to Distributed Multimedia Systems.
- Q8) Write short notes on the following :
 - a) Sequential Consistency and IVY.
 - b) Optimistic Concurrency Control.