Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

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.