Code No: **R42051** **R10** **Set No. 1**

IV B.Tech II Semester Supplementary Examinations, July/Aug – 2015

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Name and explain the challenges faced while construction of distributed systems. [8]

b) List three properties of distributed systems. [7]

2 a) Describe and illustrate the client-server architecture of one or more major Internet applications. [8]

b) Discuss the two significant factors affecting interacting processes in a distributed systems. [7]

3 a) Define the integrity property of reliable communication and list all the possible threats to integrity from users and from system components. [8]

b) Explain the different consistency models for distributed system. [7]

4 a) i) Define a distributed system and give example for the same.
ii) Discuss performance and quality of service aspects of a distributed system. [8]

b) How would you incorporate persistent asynchronous communication into a model of communication based on RMIs to remote objects? [7]

5 a) Distinguish 2-tiered vs 3-tiered client-server architecture. [8]

b) Explain consistency model used in a distributed shared memory. [7]

6 a) Discuss the Design issues for RMI. [8]

b) Consider two CORBA systems. Each with their own naming service. Outline how the two naming services could be integrated into a single Federated naming service? Discuss briefly. [7]

7 a) Explain group communication briefly? [8]

b) Explain the architecture of CORBA. [7]

8 a) Differentiate between IP and overlay routing for peer-to-peer applications. [8]

b) Distinguish between Structured versus unstructured peer-to-peer systems. [7]

Code No: **R42051** **R10** **Set No. 2**

IV B.Tech II Semester Supplementary Examinations, July/Aug – 2015

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Give five types of hardware resource that can usefully be shared. Give examples of their sharing as it occurs in practice in distributed systems. [8]

b) Why would you design a system as a distributed system? List some advantages of distributed systems. [7]

2 a) Name the problems do you predict in the direct coupling between communicating entities that is implicit in remote invocation approaches? [8]

b) List & Discuss briefly the three important and complementary ways used for the design of distributed systems. [7]

3 a) Briefly discuss about the Communicating entities and communication paradigms in distributed systems. [8]

b) Discuss the parameter passing mechanisms used in RPC. Briefly discuss the Message oriented communication. [7]

4 a) What do you mean by code migration? To what extent does JAVA RMI reply on code migration? [8]

b) Explain how Mutual Exclusion is implemented in distributed systems. [7]

5 a) A server creates a port that it uses to receive requests from clients. Discuss the design issues concerning the relationship between the name of this port and the names used by clients. [7]

b) What is NFS? Discuss some general file attributes in NFS. [8]

6 a) In comparing DCOM to CORBA, does CORBA provide standard Marshling or custom marshaling? Discuss [7]

b) Write the benefits of peer-to-peer systems [8]

7 a) List the characteristics of file systems [7]

b) Explain the File service architecture [8]

8 a) Write short notes on the following

i) RMI ii) Categories of middleware [7]

b) Give five types of hardware resource that can usefully be shared. Give examples of their sharing as it occurs in practice in distributed systems. [8]

Code No: **R42051** **R10** **Set No. 3**

IV B.Tech II Semester Supplementary Examinations, July/Aug – 2015

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Give five types of data or software resource that can usefully be shared. Give examples of their sharing as it occurs in practice in distributed systems. [8]

b) List three properties of distributed systems [7]

2 a) Explain the three specific and contrasting examples of the increasing levels of heterogeneity experienced in contemporary distributed systems [8]

b) List the Difficulties and threats for distributed systems [7]

3 a) Briefly Explain the three types of communication paradigm in distributed systems. [8]

b) Explain the implementation of RPC in a distributed system. [7]

4 Write and Test the client program with the server program to make a client program that repeatedly reads a line of input from the user, sends it to the server in a UDP datagram message, then receives a message from the server. The client sets a timeout on its socket so that it can inform the user when the server does not reply. [15]

5 a) Discuss briefly about Skype overlay architecture. [8]

b) Explain an overview of point-to-point communication in MPI (Message Passing Interface) [7]

6 a) Discuss the Design issues for RMI. [8]

b) Explain group communication briefly? [7]

7 a) List the characteristics of file systems [8]

b) Discuss the role of group communication [7]

8 a) Explain the *passive* or *primary-backup* model of replication for fault tolerance [8]

b) Write short notes on the following:

i) Fault tolerance ii) Distributed vs Network Operating system [7]

Code No: **R42051** **R10** **Set No. 4**

IV B.Tech II Semester Supplementary Examinations, July/Aug – 2015

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Discuss briefly key challenges that one needs to address in the design and development of distributed applications. [8]

b) List some disadvantages or problems of distributed systems that local only systems do not show (or at least not so strong). [7]

2 a) Discuss briefly key challenges that one needs to address in the design and development of distributed applications. [8]

b) Explain the architectural design of distributed system. [7]

3 a) Discuss difference between TCP/IP and UDP protocols for Socket-based communication. [8]

b) Discuss peer-to-peer architectural model for construction of distributed systems. [7]

4 a) Explain how the Multicast messages provide a useful infrastructure for constructing distributed systems. [8]

b) Write a Program for Multicast peer joins a group and sends and receives datagrams. [7]

5 a) Discuss briefly about advantages and disadvantages of Overlay networks. [8]

b) Discuss the mounting issues of remote file systems on NFS client. [7]

6 a) Explain in detail about the File system modules. [8]

b) Discuss the design and implementation issues of Domain Name System. [7]

7 a) Explain how distributed deadlocks can be detected. [8]

b) Explain the gossip architecture. [7]

8 a) Explain about Active replication. [8]

b) Explain how primary-backup model of replication is fault tolerant. [7]