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

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

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 the types of hardware resources which can be shared in distributed system with an illustration. [8]

b) Analyze the different challenges of distributed system. [7]

2 a) Discuss the Software Layers of distributed system architectural model. [8]

b) Compare and contrast between TCP Stream communication and UDP Datagram communication. [7]

3 a) What are the characteristics of inter-process communication? Explain. [8]

b) Write about IP Multicast communication. [7]

4 a) Write short notes on

i) Events and Notifications ii) Java RMI [8]

b) Explain the design Issues for RMI. [7]

5 a) Discuss important operating systems services that are essential for supporting the development of concurrent and scalable distributed systems. [8]

b) Explain the architecture of server threads. Give its applications. [7]

6 a) Discuss the non functional requirements of peer to peer middleware. [8]

b) Write about routing overlays of distributed file systems. [7]

7 a) Write about bully algorithm and explain how it is different from other election algorithms. [8]

b) Discuss about multicast synchronization. [7]

8 a) Explain the distributed transactions system model. [8]

b) Write about active and passive replications. [7]

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

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

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 about distributed multimedia systems. [8]

b) State and explain the challenges of distributed systems. [7]

2 a) What are variations, interface and objects of a distributed system? [7]

b) Describe the failure model of distributed system with an example. [8]

3 a) Write short notes on
i) Marshalling ii) External Data Representation [8]

b) Explain how the Multicast messages provide a useful infrastructure for constructing distributed systems. [7]

4 a) What is meant by object model? Describe how distributed objects are related to distributed system. [8]

b) Discuss about various remote procedure calls. [7]

5 a) Explain how operating system layer support the common middleware. [8]

b) Differentiate between the process and thread in distributed environment. [7]

6 a) List and explain the techniques for achieving high-performance in distributed file systems. [8]

b) Discuss the benefits of peer-to-peer systems. [7]

7 a) Write the algorithm of distributed mutual exclusion. [8]

b) Explain the Bully Algorithm for election of coordinator. [7]

8 a) How concurrency control can be achieved in distributed transactions? Explain. [8]

b) Discuss the design issues for file caching and replication. [7]

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

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

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 the types of software resources which can be shared in distributed system with an illustration. [8]

b) Define a distributed system and explain the same with two examples. [7]

2 a) Describe the interaction model of distributed system. [8]

b) Write the design requirements for Distributed architectures. [7]

3 a) Discuss the API for the Internet Protocols of distributed systems. [8]

b) Briefly explain the implementation of group communication. [7]

4 a) Write a simple RMI program that demonstrates the invocation of remote object services. For example when a client sends a message "Hello", the server responds with "Hi, You There". [8]

b) Explain with a neat sketch communication between distributed objects. [7]

5 a) Describe the architecture for multi threaded servers. [8]

b) Discuss about the operating system address space of processes in a distributed system. [7]

6 a) Discuss the Napster and its legacy with respect to distributed file systems. [8]

b) Distinguish between IP and overlay routing for peer to peer applications. [7]

7 a) Explain how mutual exclusion is handled in distributed system. [8]

b) What is the goal of an election algorithm? What are the features required for election algorithms? [7]

8 a) What is concurrency control? How it is important in distributed systems? [8]

b) Explain the primary-backup model of replication for fault tolerance. [7]

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

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

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) Explain performance and quality of service aspects of a distributed system. [8]

b) Discuss the examples of distributed systems. [7]

2 a) Describe the security model of distributed system. [8]

b) Discuss RPC semantics in the presence of failures. [7]

3 a) How inter-process communication is used in distributed systems? [8]

b) Differentiate between TCP stream communication and Client-Server Communication. [7]

4 a) What are the design issues for remote method invocation? Explain. [8]

b) Describe the process of distributed garbage collection. [7]

5 a) Discuss about the operating system address space of threads in a distributed system. [8]

b) Explain how a new process can be created in distributed systems with an example. [7]

6 a) Discuss peer-to-peer architectural model for construction of distributed systems. [8]

b) With a neat sketch explain the distributed file service architecture. [7]

7 a) What is Election Algorithm? Suppose that two processes detect the demise of the coordinator simultaneously and both decide to hold an election using the bully algorithm. Discuss this situation with an example. [8]

b) Write about multicast communication. [7]

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

b) Write the rules for connecting of nested transactions. [7]