

Sixth Semester B.E. Degree Examination, June/July 2019
Distributed Computing System

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. List the recent trends in distributed systems and explain with a diagram mobile and ubiquitous computing. (08 Marks)
b. Define the consequences of distributed system. List out the challenges of distributed systems and explain any three of them. (08 Marks)

OR

- 2 a. Define the different system models used for distributed systems design and briefly explain the various architectural patterns for distributed systems. (08 Marks)
b. Explain the failure model of distributed systems design. (08 Marks)

Module-2

- 3 a. Define the characteristics of inter process communication and explain the implementation of UDP datagram communication. (08 Marks)
b. Define Marshalling and Unmarshalling. Explain any one external data representation approach. (08 Marks)

OR

- 4 a. Explain the implantation of RPC in distributed systems. (08 Marks)
b. With an example, explain the event based distributed programming model. (08 Marks)

Module-3

- 5 a. With a diagram explain core-components of operating system. (08 Marks)
b. With the help of suitable diagrams, explain the various multi-threaded server architectures. (08 Marks)

OR

- 6 a. Explain all the requirements of distributed file systems. (08 Marks)
b. With a neat diagram, explain the SUN NFS architecture and operations. (08 Marks)

Module-4

- 7 a. Define clock skew and clock drift. Explain the network time protocol with an example. (08 Marks)
b. With an example explain the Lamport's logical time algorithm for ordering events. (08 Marks)

OR

- 8 a. Define the global properties of distributed systems and explain the snapshot algorithm for finding the global states. (08 Marks)
b. Define distributed Mutual Exclusion. Explain the ring based mutual exclusion algorithm. (08 Marks)

Module-5

- 9 a. List the types of distributed transactions and explain the nested transaction with example. (08 Marks)
b. Explain two-phase commit protocol in detail. (08 Marks)

OR

- 10 a. With suitable example define distributed deadlock and give the edge chasing algorithm for handling distributed deadlocks. (08 Marks)
b. Write short notes on:
i) Phantom deadlocks
ii) Concurrency control in distributed transactions (08 Marks)