

Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020
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. Define web-briefly. Explain three main standard technological components of web. **(10 Marks)**

b. List out the challenges of distributed system. Explain any three of them. **(06 Marks)**

OR

2 a. Briefly explain system architectures in distributed system designing. **(10 Marks)**

b. Define failure model. Explain omission failures. **(06 Marks)**

Module-2

3 a. Briefly explain the characteristics of inter-process-communication. **(06 Marks)**

b. With neat sketch, explain request reply protocol and also discuss HTTP methods in client – server communication. **(10 Marks)**

OR

4 a. Derive middleware. With neat diagram explain middle ware layer. **(06 Marks)**

b. Explain R.M.I invocation semantics. **(05 Marks)**

c. With a schematic diagram, explain role of client and server stub procedures in RPC in the context of a procedural language. **(05 Marks)**

Module-3

5 a. Draw a neat diagram and explain the core operating system functionality. **(04 Marks)**

b. Compare process and thread in distributed system. **(03 Marks)**

c. With schematic diagram, explain monolithic kernel and microkernel. And also differentiate between monolithic kernel and microkernel. **(09 Marks)**

OR

6 a. What are the requirements of distributed file system? Explain any five of them. **(06 Marks)**

b. With neat sketch, explain architecture of Sun NFS. **(10 Marks)**

Module-4

7 a. Define NTP. With neat diagram, discuss the synchronization subnet in an NTP implementation. And also explain different modes of NTP servers synchranization. **(07 Marks)**

b. Briefly explain the logical time and logical clocks. **(09 Marks)**

OR

8 a. With respect to mutual exclusion, discuss essential requirements and evaluating the performance of algorithm and also draw the diagram of server managing a mutual exclusion token for a set processes. **(09 Marks)**

b. What is an election algorithm? Explain ring based election algorithm. **(07 Marks)**

Module-5

9 a. With neat diagram, explain distributed transaction and nested banking transaction. **(08 Marks)**

b. Discuss voting phase and a completion phase of two-phase commit protocol. **(04 Marks)**

c. Discuss the operating in coordinator for nested transactions. **(04 Marks)**

OR

10 a. Illustrate locking in distributed transaction and also explain timestamp ordering currency control and optimistic concurrency control. **(10 Marks)**

b. Define deadlock. With a schematic figure, explain local and global wait–for graphs. **(06 Marks)**