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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

- 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 functionali ty. (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 election algorithm. (07 Marks)

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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)