M. Tech Computer Sem- I

MASTER OF TECHNOLOGY (COMPUTER ENGINEERING) (CBCS - 2015 COURSE) M. Tech. (Computer Engineering) Sem-I: WINTER- 2019

SUBJECT: DISTRIBUTED COMPUTING (UE)

Wednesday 04-12-2019 W-14139-2019

11:00 AM-02:00 PM Max. Marks: 60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Answer to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 What is Distributed computing system? Why distributed computing systems are gaining popularity? Explain. **(10)**

OR

Why are conventional communication protocols for network systems generally considered to be unsuitable for distributed systems? Explain with example.

Q.2 What is message passing? What are the desirable features of a good message-passing system? Explain in detail. **(10)**

OR

What is the main purpose of using an acknowledgment message in an IPC protocol? Are acknowledgement messages always needed for reliable communication? Give reason.

Q.3 What is stub? How are stubs generated? Explain how the use of stubs helps in mailing an RPC mechanism transparent. **(10)**

OR

Why do most RPC systems support call by value semantics for parameter passing? Explain with example.

SECTION - II

Q.4 What is a 'deadlock'? What are the four necessary conditions for a deadlock to occur? Give suitable examples to prove that if any one of the four conditions is absent, no deadlock is possible. **(10)**

OR

What will happen in a bully algorithm for electing a coordinator when two or more processes almost simultaneously discover that the coordinator has crashed? Explain with example.

Q.5 What are the desirable features of a good global scheduling algorithm? What research issues do you think need further attention in the area of global scheduling of processes in distributed systems? **(10)**

OR

Discuss the relative advantages and disadvantages of implementing thread package in user space and in the kernel space.

Q.6 What are some of the issues involved in building a DSM system on a network of heterogeneous machines? Suggest suitable methods for handling these issues. **(10)**

OR

What is false sharing? When is it likely to occur? Can this lead to any other problem