

**SVKM's NMIMS**  
**MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING**

Programme: B.Tech (Computer)

Year: IV

Semester: VII

**Academic Year: 2019-20**

Subject: Distributed Computing

Date: 06 November 2019

Marks: 70

Time: 2.00 pm - 5.00 pm

Durations: 3 (hrs)

No. of Pages: 01

**Final Examination (2019-20)/ Re-Examination (2018-19)**

**Instructions:** Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

- 1) Question No. 1 is compulsory.
- 2) Out of remaining questions, attempt any 4 questions.
- 3) **In all 5 questions to be attempted.**
- 4) All questions carry equal marks.
- 5) **Answer to each new question to be started on a fresh page.**
- 6) **Figures in brackets on the right hand side indicate full marks.**
- 7) **Assume suitable data if necessary.**

Q.1

- (a) What is the role of middleware in distributed system? 3
- (b) What is RMI? Draw the architectural diagram of RMI. 4
- (c) How Lamport clock's is implemented in distributed system? 3
- (d) Describe Deadlock prevention in distributed system. 4

Q.2

- (a) Explain Google File System in detail. 7
- (b) What is Process resilience? Explain various design issue of process resilience. 7

Q.3

- (a) What is Flat Naming System? State various solution for flat naming system in detail. 7
- (b) What are the basic RPC operation? Explain the steps in RPC with neat diagram. 7

Q.4

- (a) Explain Bully and Ring algorithm with neat diagram. 7
- (b) Explain Message Queuing System. What is the significance of message broker in message queuing system? 7

Q.5

- (a) Explain Data Centric Consistency models. Give the difference between client centric consistency model and data centric consistency model. 7
- (b) What is Process Migration? Explain the various steps of process migration with neat diagram. 7

Q.6

- (a) Explain Two Phase Commit protocol for the recovery of distributed database. 7
- (b) What is the need for replication? Explain the tradeoffs in distributing content for managing replicas in distributed system. 7

Q.7

Write short note:

- (a) Design issues in real time distributed system 4
- (b) File Caching in distributed file system 4
- (c) Centralized, Decentralized and Hybrid architecture 3
- (d) Centralized and Distributed mutual exclusion algorithm 3