MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL
(A constituent unit of MAHE, Manipal)

II SEMESTER M.C.A.

END SEMESTER EXAMINATIONS, APR/MAY 2019

SUBJECT: DISTRIBUTED COMPUTING SYSTEMS [MCA-5002]

REVISED CREDIT SYSTEM
(29/04/2019)

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ALL** the questions.
❖ Missing data may be suitable assumed.

1A.	In Sun Network Files System, how various transparencies demanded by distributed systems are achieved?	5
1B.	Explain how world wide web client-server architecture works based on the knowledge gained by you in Distributed Computing System Course.	3
1C.	How is distributed system is different from computer network?	2
2A.	Compare UDP and TCP based inter-process communication in distributed system. Write a UDP based client-server java program to send an integer from client and at the server has to check the received integer is part of Fibbinocci series and send the message back to the client.	5
2B.	Compare the mobile code and the thin client client-server model variants.	3
2C.	What is the significance of fundamental model within the distributed system?	2
3A.	List out the core components of a typical operating system from the perspective of distributed system. Compare process and threads in the context of distributed operating system	5
3B.	Explain following architectures design requirements of distributed systems. (a) Performance Issues (b) Quality of serveries (c) Dependability issues.	3
3C.	Compare Thread-per-request and thread-per-connection architecture.	2
4A.	Explain client server communication using HTTP.	5

4B.	List out the differences between RPC and RMI.	3
4C.	Compare at-least-once and at-most-once invocation semantics of distributed object model.	2
5A.	Explain various failure models of distributed system.	5
5B.	Discuss event-based processing and event notification distributed programming model to support distributed application.	3
5C.	Explain Cristian's method of physical synchronization.	2