

UNIT – IV

8. Why replicas are needed in Distributed Systems ? How it is one the most challenging job to control replication ? Also elaborate the basic Replication Management model while mentioning the usage of Active and Passive techniques with apt examples.

9. (i) Differentiate between Faults, Errors and Frauds with apt examples in context to Distributed Systems.

(ii) What is Confinement problem related to Distributed Systems ? Mention and explain various channels at which this problem may occur.

Roll No.

67060-N

MCA 2nd Semester 2 yr. Course
(w. e. f. 2020-21)

Examination – July, 2022

COMPUTER NETWORKS & DISTRIBUTED SYSTEMS

Paper : 20MCA22DA2

Time : Three hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, Question Number 1 is *compulsory*. In addition to *compulsory* question, student has to attempt *four* more questions selecting *one* question from each Unit.

1. (i) Write down the salient features of Analog Signals, make it so popular.
- (ii) List down six different Connection Oriented and Connectionless Services.
- (iii) How Virtual path is different from actual path of communication in Data Link Layer ?

- (iv) Write down the working principle of CSMA with collision detection in Medium Access sublayer.
- (v) Mention the streamline difference between networks and Distributed systems.
- (vi) In what scenario, Multicast communication opted ? Explain.
- (vii) Name any two most popular Consistency protocols followed in Distributed environment.
- (viii) How structured naming is different from attribute based naming ? Explain.

UNIT - I

- 2. (i) With the help of labeled diagram, explain the complete working of Asynchronous data transmission.
 - (ii) Define Data Transmission Technology. Explain how Broadcast network works differently from Point to Point networks.
3. Write explanatory notes on the issues that must be focused while designing different layers in Network Architecture covering the following points :
- (i) Rules for Data Transfer (Simplex, Duplex)
 - (ii) Identification of Senders & Receivers

UNIT - II

- 4. (i) Framing is an important task performed at Data Link layer. What is Character stuffing in framing ?
 - (ii) Differentiate between Static Channel and Dynamic Channel allocation in different networks.
5. Explain the following concepts related to Network Layer : Session Routing & Optimality principle.

UNIT - III

- 6. (i) Explain the criteria based on which Distributed Systems can be classified into different categories. (Any two)
 - (ii) Draw and elaborate the Distributed System Architecture, covering all its important components.
7. (i) Based on what characteristics, Remote Procedure Call is designed and implemented. Detail out.
- (ii) Write down the role of the following components in maintaining Synchronization in Distributed Systems : Logical Clocks and Election algorithms.