

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**M.Sc. (Computer Science) (Sem.-2)**  
**DATA COMMUNICATION & NETWORKS**

**Subject Code : MSC-204**

**M.Code : 71448**

**Date of Examination : 12-07-22**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTION TO CANDIDATES :**

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks each and students has to attempt any **ONE** question from each **SECTION**.
2. **SECTION-E** is **COMPULSORY** consisting of **TEN** questions carrying **TWENTY** marks in all.

**SECTION-A**

1. Discuss OSI model and significance of every layer in transmitting data over a network.
2. Briefly explain packet switching and how it is different than circuit switching?

**SECTION-B**

3. Why error control is required on data link layer? Explain any two techniques used for error correction on data link layer.
4. Briefly explain CSMA/CD mechanism in detail for medium access control in layer 2 and how it is different from CSMA/CA?

**SECTION-C**

5. Differentiate between distance vector and link state routing protocols. Also, explain algorithms for each type.
6. How network layer performs congestion control in a network? Discuss various algorithms for it.

## SECTION-D

7. How addressing on transport layer is different than addressing on network layer?
8. Write a short note on :
  - a. Buffering
  - b. TCP.

## SECTION-E

9. Write briefly :
  - a. Brief about different components of data communication.
  - b. Difference between MAN and WAN.
  - c. Differentiate half duplex and simplex.
  - d. Define IEEE 802.3
  - e. Define bit stuffing.
  - f. Define piggy banking.
  - g. Define ping command and its utility on a network.
  - h. Write two applications of UDP.
  - i. HTTP vs. HTTPS
  - j. Briefly explain MAC address.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**