MCA–19

Data Communication and Computer Network

Master of Computer Application (MCA-11/16/17)

Fifth Semester, Examination, 2018

Time : 3 Hours　　　　　　　　　　**Max. Marks : 80**

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. What is ISO reference model ? Explain the functions of each layer in detail.

2. Describe the various technologies that can be used to form a LAN.

3. Discuss the important design issues for various layers. Write short notes on connection-oriented and connectionless services.

4. Distinguish between TCP/IP and OSI reference models. Which model is more popular and why ?

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. What is the difference between time division multiplexing and frequency division multiplexing ?

2. In classless addressing, can two different blocks have the same prefix length ? Explain.

3. What are the main responsibilities of network layer ? Explain each one in brief.

4. Explain in detail what are the various security threats.

5. What is virtual LAN ? Explain.

6. Explain what is SSL (Secure Socket Layer) in detail and its applications.

7. Explain the concept and purpose of DNS (Domain Name System) in detail.

8. What is IPv6 ? Explain.

Section–C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

1. A device that connects two Local Area Network :

   (a) Bridge

   (b) Repeater

   (c) ISP

   (d) None of the above

2. A network architecture for connecting dissimilar devices is :
   (a) HDLC
   (b) OSI
   (c) GATEWAY
   (d) None of the above

3. OSI model is an architecture of network communication with :
   (a) 5 layer
   (b) 6 layer
   (c) 7 layer
   (d) None of the above

4. Coaxial, twisted pair cables are example of :
   (a) radio frequency
   (b) broadband medium
   (c) telephone cable
   (d) None of the above

5. .... is a set of protocols, that defines all transmission exchanges across the internet.
   (a) TCP/IP
   (b) SMTP
   (c) UDP
   (d) None of the above

6. .... is a transport layer protocol.
   (a) TCP
   (b) UDP
   (c) HTTP
   (d) None of the above

7. .... is a cable that accepts and transports signals in the form of light.

   (a) TWISTED PAIR

   (b) CO-AXIAL

   (c) OPTICAL FIBRE

   (d) None of the above

8. The most common twisted pair cable used in communication is referred to as ....

   (a) UTP

   (b) EHERNET

   (c) DNS

   (d) None of the above

9. OSI stands for ....

   (a) Open System Interconnection

   (b) Operating System Interface

   (c) Optical Service Implementation

   (d) None of the above

10. TCP/IP model does not have .... layer but OSI model have this layer.

    (a) Transport layer

    (b) Session layer

    (c) Application layer

    (d) None of the above