ROLL NO. _____

Code: DE69/DC63/DE118/DC114
Subject: DATA COMMUNICATION & NETWORKS

DipIETE – ET/CS (Current & New Scheme)

Time: 3 Hours | **June 2019** | **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2×10)

a. Which topology requires multipoint connection?
(A) Star **(B)** Bus
(C) Mesh **(D)** Ring

b._____ is a collection of many separate network.
(A) WAN **(B)** Internet
(C) LAN **(D)** None of these

c._____ consists of central conductor and a shield.
(A) Twisted Pair **(B)** Coaxial
(C) Fibre-Optic (D) None of these

d. Packet Switching takes place at the_____ layer.
(A) Physical **(B)** Network
(C) Data Link **(D)** Transport

e. Which error detection method consists of just one redundant bit per data unit?
(A) CRC **(B)** Checksum
(C) Simple Parity Check **(D)** Two Dimensional Parity Check

f. The checksum of 0000 and 0000 is _____
(A) 0000 **(B)** 1111
(C) 0111 **(D)** 1110

g. In IEEE 802.11,the MAC layer frame has _____fields.
(A) Four **(B)** Six
(C) Five **(D)** None of these

h. UDP and TCP are both _____ layer protocols.
(A) Data link **(B)** Network
(C) Transport **(D)** None of these

i. In _____ the station share the bandwidth of the channel in time
(A) FDMA **(B)** TDMA
(C) CDMA **(D)** None of these

j. In the _____ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle.
(A) P- Persistent **(B)** Non Persistent
(C) 1- Persistent **(D)** None of these

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Explain the functions of each layer of TCP/IP reference model. **(8)**

b. Explain the working of internet in brief. **(8)**

Q.3 a. Compare Analog and Digital Data Transmission. **(8)**

b. Explain any two unguided transmission media used in data communication. **(8)**

Q.4 a. Explain any one error detection techniques. **(8)**

b. Explain delta modulation Techniques. **(8)**

Q.5 a. Explain frame structure of the three types of frames used in HDLC protocol **(8)**

b. Explain Go-back-N-ARQ error control technique. **(8)**

Q.6 a. Explain any two switching Techniques. **(8)**

b. Explain Dijkstra's algorithm **(8)**

Q.7 a. What are the multiple access techniques? Also explain 1- persistent and p-persistent CSMA. **(8)**

b. Explain LAN Topologies. **(8)**

Q.8 a. Why IPv6 preferred over IPv4. **(8)**

b. Explain Address Resolution Protocol (ARP)? **(8)**

Q.9 a. Draw TCP and UDP Header. **(8)**

b. Explain Multicasting. **(8)**