

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

DiplETE – ET/CS (Current & New Scheme)

Time: 3 Hours

JUNE 2016

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)

- Connectivity is a concept related to
 - transmitting information, either by computer or by phone
 - the interconnections within a computer
 - using computer networks to link people and resources
 - being in an active session with your computer
- One of the most dramatic changes in connectivity and communications in the past five years has been _____.
 - mobile or wireless telephones
 - public and private discussion
 - satellite uplinks
 - running programs on remote computers
- The four basic elements of any communication system include
 - peer-to-peer, videoconferencing, online photo-conferencing, net optical
 - sending and receiving devices, communication channel, connection device, and data transmission specifications
 - telephone lines, coaxial cables, fiber-optics cables, and communication channel
 - software, hardware, communication channel, network
- An older type of data communications channel using multiple copper wires is called _____ technology.
 - microwave
 - fiber-optic cable
 - coaxial cable
 - twisted pair
- TCP/IP protocol has _____ number of layers in it.
 - 4
 - 7
 - 5
 - 6
- Data is transmitted using light through a _____ cable.
 - twisted pair
 - fiber-optic
 - coaxial
 - microwave

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- g. Which physical connection is the fastest?
 (A) twisted pair (B) coaxial cable
 (C) fiber-optics (D) microwaves
- h. Time Division Multiplexing is found to be most suitable for
 (A) Analog Signals (B) Digital Signals
 (C) Pulse train (D) All of these
- i. Most Web-enabled devices follow a standard known as
 (A) FireWire (B) Bluetooth
 (C) TCP/IP (D) Wi-Fi
- j. A relatively new technology that allows wireless connectivity is called _____.
 (A) Bluetooth (B) Blacktooth
 (C) Blueband (D) Broadband

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

- Q.2** a. Explain the TCP/IP Protocol Architecture. (8)
 b. Explain the emergence of Internet from ARPANET. (8)
- Q.3** a. Differentiate between Analog & Digital Data Communication. (8)
 b. Explain the basis of wireless transmission. (8)
- Q.4** a. What can be the possible reasons for shifting towards Digital medium despite the availability of enormous Analog medium? (8)
 b. What are the types of errors in communication systems? (8)
- Q.5** a. Explain the differences between FDMA & TDMA (6)
 b. Explain in brief: HDLC (10)
- Q.6** a. What is the concept of Congestion Signaling? (8)
 b. Compare and contrast Circuit switching with Packet Switching. (8)
- Q.7** Write short notes on: (8×2)
 (i) Ethernet
 (ii) Wireless LAN
- Q.8** a. What are the distinct features of IPv6? (8)
 b. Explain the dotted decimal notation used in network addressing. (8)
- Q.9** Briefly explain the following: (8×2)
 (i) Multipurpose Internet Mail Extensions
 (ii) Simple Mail Transfer Protocol