

Time: 3 Hours

DECEMBER 2012

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. LAN stands for:

- (A) Wide Area Network (B) Local Area Network
(C) Wireless Network (D) Wideband Networks

b. Flooding technique requires no _____ .

- (A) Information
(B) Network Information
(C) Fixed Data Information
(D) Variable data Information

c. The TCP/IP model organizes the communication task into following relatively independent layer.

- (A) 5 (B) 7
(C) 9 (D) 6

d. In data transmission system, the transmission medium is the Physical Path between _____

- (A) Transmitter and Receiver (B) Transmitter and Transmitter
(C) Receiver and Receiver (D) Receiver and Transmitter

e. Frequency in the Range of about 2 GHz to 40 GHz are referred to as _____

- (A) VLF (B) Microwave Frequency
(C) ULF (D) HF

Code: DE69/DC63 Subject: DATA COMMUNICATION & NETWORKS

- b. Explain the basic characteristics of high-level Data Link Control (HDLC). **(8)**
- Q.5** a. Explain four generic architectural components of a public telecommunication network. **(8)**
- b. Briefly describe four key routing strategies: Fixed, Flooding, Random and Adaptive. **(8)**
- Q.6** a. Explain in detail the key elements of a LAN Topology, Transmission Medium, Wiring Layout and Medium Access control. **(8)**
- b. What is the purpose of IEEE-802 Reference model? Explain IEEE-802 Protocol layers compared to OSI model. **(8)**
- Q.7** a. What is Internet Protocol? Also explain various IP Address Classes. **(8)**
- b. Describe Internet Group Management Protocol (IGMP) and IGMP message format. **(8)**
- Q.8** a. Explain Cyclic Redundancy Check (CRC) code used for error detection. Use a suitable example. **(8)**
- b. Explain two techniques – B8ZS and HDB3, commonly used in long- distance transmission services. **(8)**
- Q.9** Explain in detail any **TWO** of the following: **(8×2)**
- (i) Electronic Mail – SMTP and MIME
(ii) HOP-by-HOP options Header
(iii) Multicasting