ETT

E-008

Roll No. .....

DATA COMMUNICATION

Time : 3 hrs. 2K5-DS-03 M.M. 100

Note :— 1. Part 'A' may be attempted in first 5 pages of Answer Sheet.
भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम पांच पृष्ठों में ही करना हैं।

2. Part 'B' in rest of the Sheets of Answer Sheet.
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।

3. *Answers may be given in English or Hindi.*
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

PART - 'A'

Q. 1. Attempt any TEN of the following questions :- (10X2 = 20)

(1) What is SNR?
(2) Define DPSK
(3) Define time period?
(4) Define bandwidth?
(5) What are the characteristics of Electromagnetic waves?
(6) What is meant by simplex and duplex mode of transmission.
(7) What is Redundancy?
(8) Write about Character and Message Redundancy?
(9) What is meant by Network Topology?
(10) Mention the applications of analog modulation and digital modulation.?
(11) Briefly explain the losses that occur in optical fiber cables?
(12) Define PAM. Explain its limitations?
(13) Write about terrestrial propagation of electromagnetic waves?
(14) Describe the basic telephone call procedures?

Q. 2. Attempt any FIVE of the following questions : (5X4 = 20)

1) Write a short note on digital modulation.
2) List out the advantages of broadband cable over base-band cable in transmission media.
3) Discuss about TCP/IP protocol architecture.
4) Explain about transmission impairments. How it will affect the information carrying capacity of channel?
5) Write about the characteristics of Electromagnetic Waves.

6) Clearly explain about light sources and light detectors.

7) Describe about various digital-to-digital signal encoding techniques.

8) What are the three major multiplexing techniques? Explain.

PART - 'B'

Attempt any THREE questions of the following : **(3x20=60)**

Q. 3. (a) Define LOS propagation. What are the impairments specific to wireless LOS transmission?

(b) What is Electrical noise? Write in brief the most prevalent types of Electrical noise.

Q. 4. (a) Explain in detail about the single-mode and multi-mode step-index optical fiber.

(b) What is Time-Division Multiplexing? Explain with block diagram.

Q. 5. (a) Draw and explain Single-Channel, Simplex PCM transmission system.

(b) What are the different techniques used for data detection and data correction. Explain in detail.

Q. 6. (a) What is the need of modulation. Define analog and digital modulation. Discuss the advantage and disadvantage of each.

(b) Explain and draw block diagram of a QPSK modem.

Q. 7. (a) Explain in detail about First Generation Analog Cellular Telephone system.

(b) Draw and explain loop back method and its implementation in detail.