23124

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(7) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following : **10**

(a) State the classification of communication system.

(b) State minimum sampling rate using Nyquist criteria.

(c) Define :

(i) Bit rate

(ii) Baud rate

(d) State the strengths of fiber optical systems.

(e) Draw the layered Architecture of OSI reference model.

(f) State any four applications of Bluetooth.

(g) Draw Universal Serial Bus (USB) architecture.

2. Attempt any THREE of the following : **12**

(a) Differentiate between PPM and PWM.

(b) Draw block diagram of Digital Communication System. State any two limitations of Digital Communication.

(c) State Impedance and use of following categories of Co-axial cables :

(i) RG-58

(ii) RG-59

(d) Define LAN. State different IEEE standards for LAN.

3. Attempt any THREE of the following : **12**

(a) Describe Pulse Position Modulation (PPM) with neat waveform.

(b) Draw and explain block diagram of Pulse Code Modulation (PCM).

(c) Draw and describe the construction of fiber optical cable.

(d) Compare TCP and UDP (any four points).

4. Attempt any THREE of the following : **12**

(a) Compare between single mode and multimode fiber.

(b) Draw labelled sketch of coaxial cable and state its advantages and disadvantages.

(c) Differentiate between LED and LASER.

(d) State classification of transmission media.

(e) State the basic functions of

(i) Modem

(ii) Router

5. Attempt any TWO of the following : **12**

(a) (i) State the types of communication media and their frequency of operation.

(ii) Draw electromagnetic spectrum.

(b) Draw neat labelled signal waveform diagram of

(i) AM

(ii) FM

(c) List the categories of Network topology and draw sketch of two topology.

6. Attempt any TWO of the following : **12**

(a) Draw the output waveforms of

(i) ASK

(ii) FSK

For the given Binary input [1 1 0 1 0]

(b) List the types of optical fiber cable. Explain any one type using refractive index profile.

(c) Draw and explain architecture of Bluetooth and state its layers.
