

Scheme – E

Sample Question Paper

Course Name : Diploma in Information Technology/Instrumentation Engineering

Course Code : IF/ IE/ IU

Semester : Sixth

12267

Subject Title : Data Communication and Networking

Times : 3 Hr.

Marks: 100

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q. 1 A) Attempt any THREE of the following. 12 Marks

- a) Draw components of data communication system and state function of each component.
- b) State any four applications of Laser.
- c) State fibre optic cable losses.
- d) Draw the protocol stack of Bluetooth and label it.

Q. 1 B) Attempt any ONE of the following. 06 Marks

- a) Explain two types of transmission errors with example.
- b) Describe L2CAP layer of Bluetooth.

Q. 2 Attempt any TWO of the following. 16 Marks

- a) What is packet switching technique? Explain it along with virtual circuit approach.
- b) Sketch architecture of ATM and explain functions of each layer in ATM.
- c) Describe working of file transfer protocol (FTP).

Q. 3 Attempt any FOUR of the following. 16 Marks

- a) Compare between circuit switching and packet switching w.r.t.
 - i) Transmission delay ii) Path iii) Bandwidth iv) Intermediate storage
- b) State necessity of Frame Relay in communication network.
- c) State four characteristics of Light detector.

- d) Describe propagation of light through optical fiber.
- e) Describe scattering loss in optical fiber.

Q. 4 A) Attempt any THREE of the following.

12 Marks

- a) State the function of FHSS.
- b) State any four application of Bluetooth network.
- c) Sketch architecture of IEEE 802.11.
- d) Illustrate the function of fibre optic communication system with neat block diagram.

Q. 4 B) Attempt any ONE of the following.

06 Marks

- a) Define the term Error detection. Explain Cyclic Redundancy Check (CRC) with example.
- b) Explain the working of MIME.

Q. 5 Attempt any TWO of the following.

16 Marks

- a) What is Frame Relay? Explain standard frame relay frame format.
- b) State the concept of SNMP. List two advantages and disadvantages of SNMP.
- c) What is SMTP? Explain Mail Transaction along with SMTP.

Q. 6 Attempt any FOUR of the following.

16 Marks

- a) Describe the term DSSS.
- b) How Sliding window protocol used for error recovery?
- c) Explain the concept of date Communication with example.
- d) Define protocol. Describe two types of Protocol.
- e) State the need for standards? List two standards organization.