

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—MARCH, 2013

DATA COMMUNICATION

(Common for CT, CM and IF)

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Interpret the term 'protocol' in data communication.
2. Define 'delay distortion'.
3. Write the bit representation methods in Differential Manchester.
4. State the use of parity check and classify it.
5. Define cipher text.

(5x2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* questions. Each question carries 6 marks.

1. Write the need for protocol architecture.
2. Explain the arrangement of nodes in mesh topology. List the disadvantages in mesh that are not present in star topology.
3. Illustrate with a neat figure, the use of delta modulation for improvement in PCM signals.
4. Describe the various station types, configurations and modes of communication in HDLC.
5. Explain frequency division multiplexing.
6. Give brief description of data encryption standards.
7. Explain the advantages of wireless communication system.

(5x6=30)

PART—C

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT – I

- | | |
|---|---|
| III (a) Distinguish between LAN, MAN and WAN. | 6 |
| (b) Explain TCP/IP protocol architecture with a neat diagram. | 9 |

OR

	Marks
IV (a) Outline the design issues of layered architecture.	6
(b) (i) Define analog and digital signals.	4
(ii) Distinguish between analog and digital transmission.	5

UNIT – II

V (a) Distinguish between guided and unguided transmission media with two examples each.	5
(b) Explain the different digital modulation techniques : ASK, FSK and PSK.	10

OR

VI (a) With the help of a neat sketch describe the constructional details of a coaxial cable and list out its standards.	6
(b) Give a brief description of NRZ-L and NRZ-I digital signal encoding formats with figures.	9

UNIT – III

VII (a) Explain simplex, Half duplex and Full duplex communication modes with examples.	6
(b) Distinguish between Asynchronous and Synchronous transmission.	9

OR

VIII (a) Write brief description of Asynchronous and Synchronous TDM.	6
(b) Explain different ARQ techniques for error control.	9

UNIT – IV

IX Write notes on :

- (i) Circuit switching.
- (ii) Roll call polling.
- (iii) Digital signature.

(3x5=15)

OR

X (a) Explain cryptography and write any public key encryption algorithm.	10
(b) Write notes on packet switching.	5