

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2022**

DIGITAL COMMUNICATION

[Maximum Marks: 100]

[Time: 3 Hours]

PART-A

[Maximum Marks: 10]

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

1. State sampling theorem.
2. Draw the spectrum of BPSK .
3. List any two advantages of MSK
4. Define message.
5. Define ciphers

(5 x 2 = 10)

PART-B

[Maximum Marks: 30]

II. (Answer *any five* of the following questions. Each question carries 6 marks)

1. Explain differential PCM.
2. Compare different pulse modulation techniques.
3. Draw the block diagram of BPSK transmitter.
4. Explain error detection using parity method.
5. List any four limitations of FEC codes.
6. Explain half duplex and full duplex data transmission methods with example.
7. Explain asynchronous data transmission.

(5 x 6 = 30)

PART-C

[Maximum Marks: 60]

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

UNIT – I

- III. (a) Explain basic elements of PCM. (9)
- (b) Explain Pulse Amplitude Modulator. (6)

OR

- IV. (a) Explain delta modulator. (8)
(b) Describe companding in PCM. (7)

UNIT – II

- V. (a) Explain Gaussian Minimum Shift Keying. (7)
(b) Explain BFSK detector. (8)

OR

- VI. (a) Explain the block diagram of band pass transmission system. (8)
(b) Explain QPSK transmitter. (7)

UNIT- III

- VII. (a) Explain error detection and correction capabilities of hamming codes. (8)
(b) Derive the equation for entropy. (7)

OR

- VIII. (a) Describe convolution Interleaving. (7)
(b) Write different steps to code information using Shannon-Pano algorithm. (8)

UNIT - IV

- IX. (a) Explain any two error control methods. (8)
(b) Explain TDM with block diagram. (7)

OR

- X. (a) Explain different types of switching. (9)
(b) Describe digital signature. (6)
