**TED (15/19)5201**
**(Revision – 2015/19)**

**1503240328**

**Reg. No……**
**Signature …….**

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2025**

# 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. Define quantization error.
2. List the analog pulse modulation techniques.
3. Draw the power spectrum of BPSK.
4. List the different data transmission methods.
5. Define entropy. (5 x 2 = 10)

## PART-B

[Maximum Marks: **30**]

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

1. State and explain sampling theorem.
2. With a neat block diagram, explain adaptive delta modulation.
3. List the advantages and disadvantages of MSK compared to QPSK.
4. Write a note on Hamming code.
5. State and explain Channel Capacity theorem.
6. Write note on Time Division Multiplexing.
7. Explain the process of digital signature verification. (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. Describe slope overload distortion. (5)

b. Compare PAM, PWM and PPM. (10)

**OR**

IV. a. Draw the block diagram of PCM transmitter. (5)

b. Explain PWM modulation and demodulation with necessary diagrams. (10)

**UNIT – II**

V. a. Explain a BPSK transmitter and receiver with necessary diagrams and waveforms. (10)

b. Draw the diagram of MSK transmitter. (5)

**OR**

VI. a. Explain QPSK transmitter and receiver with block diagram. (10)

b. Draw the diagram of BFSK receiver. (5)

**UNIT- III**

VII. a. Explain Shanon-Fano algorithm with an example. (10)

b. Describe how error detection is done using single parity method. (5)

**OR**

VIII. a. Describe block interleaving method for burst error correction. (10)

b. Explain error detection using CRC code. (5)

**UNIT - IV**

IX. a. Explain RSA algorithm. (8)

b. Write note on packet switching. (7)

**OR**

X. a. Explain the concept of Frequency Division Multiplexing. (10)

b. Explain any two ARQ schemes used for error control. (5)

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