DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024

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. List different types of pulse modulation

2. What is quantisation error?

3. Define Entropy

4. List any two advantages of QPSK over BPSK.

5. What is digital signature?   (5 x 2 = 10)

PART-B
[Maximum Marks: **30**]

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

1. Define Sampling theorem and explain its significance.

2. Describe the noise effects in Delta modulation.

3. Draw and explain BFSK generation.

4. State the theorem of channel capacity.

5. Explain convolutional code.

6. Explain synchronous and asynchronous Data transmission.

7. Explain about Data security.   (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 PPM modulation with neat block diagram.   (8)

   b. Explain Adaptive delta modulation.   (7)

<div align="center">**OR**</div>

IV.   a. Explain PCM system with block diagram.   (12)

b. Write down the comparison between PAM and PWM.   (3)

<div align="center">**UNIT – II**</div>

V.   a. Draw and Explain the generation of QPSK.   (12)

b. Write down the merits of GMSK.   (3)

<div align="center">**OR**</div>

VI.   a. Explain MSK system.   (8)

b. Draw and explain BFSK demodulation.   (7)

<div align="center">**UNIT- III**</div>

VII. a. Explain Shannon -fano algorithm for coding.   (7)

b. Explain the following
      (i) Information(ii) information content (iii) message (iv) channel capacity   (8)

<div align="center">**OR**</div>

VIII. a. Describe block interleaving code.   (8)

b. Explain one of the error detection method.   (7)

<div align="center">**UNIT - IV**</div>

IX.   Explain TDM and FDM system.   (15)

<div align="center">**OR**</div>

X.   a. Describe different Data transmission modes.   (12)

b. What is ciphers?   (3)

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