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

COMMUNICATION ENGINEERING

(Maximum Marks:100)   (Time: 3 Hours)

PART - A
(Maximum Marks : 10)

Marks

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

1. Define EM wave.

2. Define Modulation Index of FM

3. List various pulse modulation schemes.

4. Define Signal to Noise Ratio.

5. Define Selectivity of Radio receiver.   (5 x 2 = 10)

PART - B
(Maximum Marks: 30)

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

1. Define Skip Distance and Max Usable Frequency (MUF).

2. Define radiation pattern and draw radiation   pattern for a half wave dipole antenna.

3. State sampling theorem and describe its significance.

4. Explain Pre-emphasis and De-emphasis in radio communications.

5. Define Demodulation and explain the need for demodulation.

6. Describe the function of amplitude limiter in FM receivers.

7. Describe AFC.   (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 three different modes of wave propagation with proper sketches.   (10)

      (b) Describe the effect of curvature on space wave propagation.   (5)

OR

IV   (a) Explain the working of parabolic Antenna.   (8)

      (b) Write a short note on Smart Antenna   (7)

UNIT – II

V   (a) Derive the expression for AM wave   (10)

      (b) Explain the frequency spectrum of AM   (5)

OR

VI   (a) Explain the collector modulator circuit for AM Generation.   (8)

      (b) Describe Pulse Code Modulation.   (7)

UNIT – III

VII   With a neat block diagram explain AM Transmitter.   (15)

OR

VIII   Explain using neat block diagram the direct and indirect FM transmitters.   (15)

UNIT – IV

IX   (a) Explain AM demodulation using Diode detector.   (10)

      (b) Define selectivity, Sensitivity, Fidelity, SNR, and Noise figure of Radio receive.   (5)

OR

X   With neat block diagram explain Super heterodyne receiver.   (15)

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