TED (15/19)3041
(Revision – 2015/19)

A25 - 9101

Reg. No……
Signature ……

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

COMMUNICATION ENGINEERING

[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 radiation patterns.
2. Describe maximum usable frequency (MUF).
3. State sampling theorem.
4. Define signal to noise ratio.
5. Define noise figure of radio receivers. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

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

l. Explain space wave propagation.
2. Explain different digital carrier modulation schemes.
3. Explain the AM modulator circuit using collector modulation.
4. Define pre-emphasis and de-emphasis.
5. State the different measures to improve signal to noise ratio.
6. State the need of limiter in FM receivers.
7. Explain super heterodyne receiver. (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 ground wave propagation. (9)

b. Explain the working of folded dipole antenna. (6)

OR

IV. a. Explain the layers of ionosphere and its significant in communication. (9)

b. Define MANET and its applications. (6)

UNIT – II

V. a. Define AM, draw the waveform of AM and derive the equations for AM. (9)

b. Explain PCM. (6)

OR

VI. a. Describe frequency spectrum and bandwidth of FM. (9)

b. Explain balanced modulator. (6)

UNIT- III

VII. a. Explain the block diagram of AM transmitter. (9)

b. Describe AFC. (6)

OR

VIII. a. Explain different types of noises. (9)

b. Explain the direct method of FM generation. (6)

UNIT - IV

IX. a. Explain AM demodulation circuit using diode detector. (9)

b. Explain the operation of FM radio receiver. (6)

OR

X. a. Explain selectivity, sensitivity, fidelity and noise figure of radio receivers. (9)

b. Explain simple AGC. (6)

****