TED (15/19) 3041
(Revision-2015/19)

**N22-07382**

Reg.No.....
Signature.....

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

# COMMUNICATION ENGINEERING

[Maximum marks: 100] (Time: 3 Hours)

## PART – A
**Maximum marks : 10**

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

1. Define critical frequency.
2. Draw the spectrum of VSB.
3. Define signal to Noise Ratio.
4. Define fidelity of a radio receiver.
5. List any two digital carrier modulation schemes. (5 x 2 = 10)

## PART – B
**Maximum marks : 30**

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

1. Explain the working of a parabolic antenna.
2. Explain pulse code modulation.
3. Define pre-emphases and explain its significance.
4. State the need of limiter in FM receiver.
5. Explain significance of ionosphere with layer structure.
6. List the measures to improve signal to noise ratio.
7. Explain AM demodulation with diode detector. (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 atmospheric effects on electromagnetic wave propagation. (10)

(b) Explain half wave dipole. (5)

OR

IV.(a) Explain Types of Electromagnetic wave propagation. (10)

(b) Explain virtual height. (5)

**UNIT-II**

V.(a) Draw and explain a collector modulator circuit. (10)

(b) Draw the waveforms of AM and FM for the same base band signal. (5)

**OR**

VI. (a) Derive the expression for AM modulated wave and draw the spectrum. (10)

(b) Describe sampling theorem and its significance. (5)

**UNIT-III**

VII.(a) Explain the block diagram of AM transmitter. (8)

(b) Explain types of noises. (7)

**OR**

VIII.(a) Explain the block diagram of FM transmitter. (8)

(b) Describe is AFC loop, explain its significance in FM transmitter. (7)

**UNIT-IV**

IX.(a) Explain a superheterodyne AM receiver with block diagram. (8)

(b) Describe about AGC, explain any two types. (7)

**OR**

X. (a) Explain the operation of FM radio receiver with a block diagram. (8)

(b) Compare AM and FM receivers. (7)

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