

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

COMMUNICATION ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. What is Vertical Polarization in EM wave ?
2. List different layers of ionosphere.
3. Define modulation index in FM.
4. Define Signal to Noise ratio in communication.
5. What is meant by simple AGC in Radio receivers. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain half wave dipole antenna with figure.
2. Define Skip Distance, Critical frequency and Maximum usable frequency.
3. An AM transmitter radiates 50W when the carrier is not modulated. Calculate the total power when the carrier is modulated to a depth of 80%.
4. Differentiate between PAM and PWM.
5. Explain with a block diagram the working of FM direct transmitter.
6. Explain delayed AGC in communication receivers.
7. Compare AM and FM Receivers. (5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain Skywave propagation using different layers of atmosphere. 8
 (b) Define MANET and list its applications. 7

OR

- IV (a) Explain Ground wave propagation and space wave propagation. 8
 (b) Explain different types of Electromagnetic waves. 7

UNIT — II

- V (a) Compare DSBSC, SSBSC and VSB. 8
 (b) A radio transmitter radiates a power of 9 kw when unmodulated and a total power of 10.125kw when it is modulated by a sinusoidal wave. Calculate the modulation index. 7

OR

- VI (a) Explain with figure, the working of balanced modulator. 12
 (b) List the advantages of PCM. 3

UNIT — III

- VII (a) Draw the block diagram of AM Transmitter and discuss the function of each block. 10
 (b) State the different measures adopted to improve signal to noise ratio. 5

OR

- VIII (a) Explain the working of FM transmitter using AFC with block diagram. 8
 (b) Explain different types of noises in communication system. 7

UNIT — IV

- IX (a) Explain AM Demodulation circuit using Diode detector. 8
 (b) What are the criteria for choosing IF in Super heterodyne Receiver. 7

OR

- X (a) Draw the block diagram of FM Radio receiver and explain the working of each block. 10
 (b) What are the main characteristics of a Radio Receiver. 5