

**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. Define electric field.
2. Draw Yagi - Uda antenna.
3. Draw the modulated waveform of FM.
4. Define signal to noise ratio.
5. What is selectivity ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain ground wave propagation.
2. Describe about folded dipole antenna.
3. Draw the block diagram of low level modulator.
4. With the help of a block diagram explain a super heterodyne receiver.
5. A broadcast radio transmitter radiates 10kw, when modulation percentage is 60. How much of this is carrier power.
6. State the different measures to improve signal to noise ratio.
7. Explain the choice of IF in super heterodyne receiver.

(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) Draw and explain different layers of ionosphere. 9
 (b) Explain space wave propagation. 6

OR

- IV (a) Explain the physical orientation of EM wave with the help of diagram. 8
 (b) Define diffraction and refraction. Explain how electro magnetic waves are reflected back by the ionosphere. 7

UNIT — II

- V (a) Draw and explain the frequency spectrum of AM. 8
 (b) Differentiate narrow band and wide band FM. 7

OR

- VI (a) Explain collector modulation circuit. 7
 (b) Draw and explain the block diagram of high level modulator. 8

UNIT — III

- VII (a) Draw and explain the block diagram of indirect method of FM generation. 8
 (b) List various types of noise in communication system. Explain any two. 7

OR

- VIII (a) Describe AFC and what are its advantages. 7
 (b) Explain pre emphasis and de emphasis. 8

UNIT — IV

- IX (a) What are the needs of AGC. Explain delayed and forward AGC. 9
 (b) Explain the need of limiter in FM receiver. 6

OR

- X (a) Draw the block diagram of FM radio receiver and explain each block. 8
 (b) Draw a circuit to detect the AM signals in a receiver and explain. 7