



TED (10) – 4045

Reg No. ....

(REVISION — 2010)

Signature .....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018**

**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 skip distance.
2. What is meant by refraction of EM waves ?
3. Define modulation index of AM.
4. Define signal to noise ratio.
5. What is meant by sensitivity of a receiver ?

(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. Which antenna is called a super gain antenna ? Explain its operation with a neat sketch.
3. (a) Draw the frequency spectrum of AM wave.  
(b) A broadcast transmitter radiates 6 KW when the modulation percentage is 80. Calculate carrier power.
4. What are the advantages of single side band system.
5. Draw the block diagram of direct FM generation using PLL and explain.
6. What is the function of harmonic generator in AM transmitter ? Explain.
7. List the factors influencing the choice of the intermediate frequency of a receiving system.

(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 the different layers of Ionosphere and mention the roles of each in communication. 10  
(b) Describe the concept of horizontal and vertical polarization. 5

OR

- IV (a) Describe the effect of Earth's curvature on space wave propagation. 5  
(b) What is meant by radiation pattern ? Explain the operation of the following antennas with diagrams. 10  
(i) Rhombic antenna (ii) Turnstile antenna

UNIT — II

- V Draw the waveforms of FM and derive the expression of the wave. 15

OR

- VI (a) Compare FM with PM. 6  
(b) Mention reasons to introduce suppressed carrier system. Explain its advantages and disadvantages over full carrier systems. 9

UNIT — III

- VII (a) Draw the block diagram of Crosby FM transmitter and explain the functions of each block. 9  
(b) Write short notes on three types of noises. 6

OR

- VIII (a) Draw the block diagram of AM transmitter and explain. 8  
(b) What is the need of AFC ? With diagram explain its operation. 7

UNIT — IV

- IX (a) Draw the circuit of practical diode detector for AM demodulation and explain its working. 7  
(b) Draw the block diagram of FM radio receiver and explain each block. 8

OR

- X (a) List the advantages of RF amplifier. 6  
(b) Explain simple, delayed and forward AGC. 9