

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

A22-06588

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

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

**COMMUNICATION ENGINEERING**

(Maximum Marks:100)

(Time: 3 Hours)

**PART - A**  
( Maximum marks : 10 )

**Marks**

- I. Answer all the questions in one or two sentences. Each question carries 2 marks.
1. List the polarizations of EM wave.
  2. Define the modulation index of AM wave.
  3. Draw a pre-emphasis circuit.
  4. State the need of AGC in Receiver.
  5. Define the sensitivity of a FM receiver. ( 5 x 2 = 10 )

**PART - B**  
( Maximum Marks: 30 )

- II Answer *any five* questions from the following. Each question carries 6 marks.
1. Explain briefly the factors affecting the ground wave propagation?
  2. Illustrate the working of SMART antenna and list its advantages and disadvantages.
  3. Briefly explain the conversion process of analog to digital signal.
  4. Illustrate the analog pulse modulation methods?
  5. How can improve the signal to noise ratio in communication systems.
  6. Explain the working of demodulation circuit in AM Receiver.
  7. Draw the block diagram of FM receiver. ( 5 x 6 = 30 )

**PART - C**  
(Maximum marks: 60 )

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

**UNIT - 1**

- III (a) Explain the different types of ionosphere layer and its effect in EM wave. (8)  
(b) Describe the half wave dipole antenna and its application (7)

**OR**

- IV (a) To explain atmospheric effects in EM wave. (8)  
(b) List the properties of the Electromagnetic waves. (7)

**UNIT – 2**

- V (a) Explain the working of balanced modulator circuit with neat diagram? (9)  
(b) Derive the expression of amplitude modulated wave and also illustrate the modulation index? (6)

**OR**

- VI (a) Illustrate the various pulse modulation methods with necessary wave forms. (8)  
(b) Briefly explain power savings at the time of transmission with suitable example?. (7)

**UNIT – 3**

- VII (a) State the necessity of the AFC in FM transmission. (8)  
(b) Explain the block diagram of AM transmitter. (7)

**OR**

- VIII (a) Illustrate the different types of noise in communication system? (8)  
(b) Explain Indirect FM transmitter with neat block diagram? (7)

**UNIT – 4**

- IX (a) Explain the working of super heterodyne AM receiver with neat block-diagram? (8)  
(b) Explain the working of discriminator with suitable circuit. (7)

**OR**

- X (a) Define the various characteristics of the radio receiver. (8)  
(b) Compare the AM and FM receiver? (7)

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