

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

COMMUNICATION SYSTEMS

[Maximum Marks: 100]

[Time: 3 Hours]

PART-A

[Maximum Marks: 10]

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

1. Give the advantages of horn antenna.
2. List two applications of satellite.
3. What is numerical aperture of fiber optics?
4. Define a cell in cellular communication.
5. What is GPS navigation system?

(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 use of wave guide in microwave communication.
2. Explain geostationary satellite.
3. Explain the principle of propagation of light in an optical fiber.
4. Explain the concept of Wi-Max.
5. List the GSM standards.
6. List the advantages of optical fiber communication.
7. Explain the concept of CDMA.

(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 the working of Reflex Klystron with necessary diagram. (9)
- (b) Explain the function of microwave repeater. (6)

OR

- IV. (a) Draw the block diagram of microwave transmitter and explain. (7)
(b) Draw and explain the working of TWT amplifier with a neat schematic diagram. (8)

UNIT – II

- V. (a) Briefly explain communication satellite with block diagram. (9)
(b) Explain the DTH satellite television. (6)

OR

- VI. (a) Compare FDMA and TDMA. (9)
(b) Write short notes on:
i) Geographic information system (GIS) ii) Dish antenna (6)

UNIT- III

- VII. (a) Explain the fiber optics communication system with neat block diagram. (9)
(b) Compare single mode and multi mode fiber. (6)

OR

- VIII. (a) Explain the working of PIN diode used in fiber optics. (8)
(b) Explain optical fiber cable losses. (7)

UNIT - IV

- IX. (a) Explain a basic cellular system. (9)
(b) Explain the features and application of Wi-fi. (6)

OR

- X. (a) Draw the block diagram of GSM network architecture and explain. (9)
(b) Explain the basic concept of 4G. (6)
