

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – NOVEMBER -2020.

**COMMUNICATION SYSTEMS**

(Maximum Marks : 75)

[Time : 2.15 hours]

**PART-A**

Marks

I. Answer **any three** questions in one or two sentences. Each question carries 2 marks.

1. What are the different types of waveguides used in microwave communication system?
2. Write any two applications of satellite.
3. Define numerical aperture.
4. Write any two advantages of mobile communication.
5. List the applications of Wi-Max. (3x2=6)

**PART - B**

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

1. Explain the working principle of reflex klystron with a neat diagram.
2. Explain the function of horn antenna.
3. Compare FDMA and TDMA.
4. Explain GPS navigation system.
5. Differentiate single mode and multimode fibers.
6. Compare 3G and 4G mobile technologies.
7. Explain the working of avalanche diode with diagram. [4x6 =24]

**PART - C**

(Answer **any of the three units** from the following. Each full question carries 15 marks)

**UNIT I**

- III (a) With the help of a neat sketch explain the working of TWT. (8)
- (b) Draw the block diagram of microwave repeater and explain. (7)

**OR**

- IV** (a) Draw the block diagram of microwave transmitter and explain. (8)  
(b) With the help of V-I characteristics explain the working of tunnel diode. (7)

**UNIT- II**

- V** (a) With the help of a block diagram explain the principle of satellite communication. (8)  
(b) Explain a geostationary satellite. (7)

**OR**

- VI** (a) Describe DTH TV system. (8)  
(b) Draw different types of communication satellite orbits. (7)

**UNIT- III**

- VII** (a) Explain the block diagram of fibre optic communication system. (8)  
(b) Explain the working of PIN diode. (7)

**OR**

- VIII** (a) Explain the working of LASER diode with energy band diagram. (9)  
(b) What are the advantages of optical fiber communication system. (6)

**UNIT – IV**

- IX** (a) Explain GSM network architecture. (10)  
(b) Compare Wi-fi and Wi-Max. (5)

**OR**

- X** (a) Explain frequency reuse and handoff strategies in mobile communication system. (9)  
(b) Write short notes on (i) Blue tooth (ii) RFID. (6)

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