

## **Data Communication & Computer Networks**

### **Assignment Questions (Unit:2)**

**SUBMISSION DATE :25-09-2025**

1. Explain the difference between Guided and Unguided Transmission Media with suitable examples.
2. Describe the construction, advantages, and disadvantages of Twisted Pair Cable, Coaxial Cable, and Fiber Optic Cable.
3. Compare Radio, Microwave, and Infrared Transmission in terms of frequency range, applications, and limitations.
4. Define Analog Signals and Digital Signals. Explain the key differences between them.
5. What is Line Coding? Explain NRZ (Non-Return-to-Zero) and Manchester Encoding with waveforms.
6. Explain the process of Digital-to-Analog Conversion with examples .
7. Explain the process of Analog-to-Digital Conversion with examples of encoding techniques (e.g., PCM, Delta Modulation).
8. Compare FDM, TDM, and WDM Multiplexing Techniques. Give one real-life application of each.
9. Differentiate between Circuit Switching, Packet Switching, and Message Switching. Which one is most widely used today and why?
10. Explain Simplex, Half-Duplex, and Full-Duplex Transmission Modes with examples.