

# NIELIT Gorakhpur

**Course Name: O Level (2nd Sem)**

**Subject: ICT**

**Topic: Transmission Media**

**Date: 15-05-20**

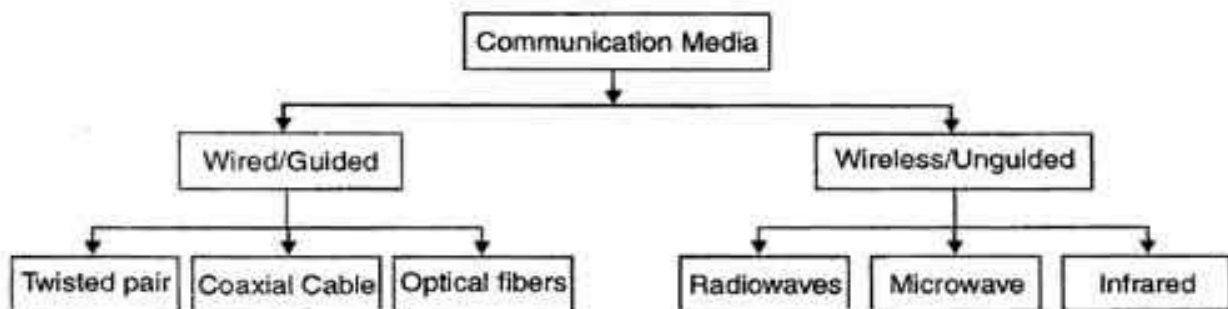
## **Transmission Media:**

**Transmission media** is a pathway that carries the information from sender to receiver. We use different types of cables or waves to transmit data. Data is transmitted normally through electrical or electromagnetic signals.

An electrical signal is in the form of current. **An electromagnetic signal** is series of electromagnetic energy pulses at various frequencies. These signals can be transmitted through copper wires, optical fibers, atmosphere, water and vacuum. Different Medias have different properties like bandwidth, delay, cost and ease of installation and maintenance. Transmission media is also called Communication channel.

## **Types of Transmission Media:**

In telecommunications, transmission media can be divided into two broad categories: guided and unguided. Guided media include twisted-pair cable, coaxial cable, and fiber-optic cable.



## **Wired or Guided Media or Bound Transmission Media:**

Bound transmission media are the cables that are tangible or have physical existence and are limited by the physical geography. Popular bound transmission media in use are twisted pair cable, co-axial cable and fiber optical cable. Each of them has its own characteristics like transmission speed, effect of noise, physical appearance, cost etc.

## **Wireless or Unguided Media or Unbound Transmission Media:**

Unbound transmission media are the ways of transmitting data without using any cables. These media are not bounded by physical geography. This type of transmission is called **Wireless communication**. Nowadays wireless communication is becoming popular. Wireless LANs are being installed in office and college campuses. This transmission uses Microwave, Radio wave, Infra red are some of popular unbound transmission media.

## **Factors need to be considered for designing the transmission media:**

- **Bandwidth:** All the factors are remaining constant, the greater the bandwidth of a medium, the higher the data transmission rate of a signal.
- **Transmission impairment:** When the received signal is not identical to the transmitted one due to the transmission impairment. The quality of the signals will get destroyed due to transmission impairment.
- **Interference:** Interference is defined as the process of disrupting a signal when it travels over a communication medium on the addition of some unwanted signal.

## **Exercise:**

1. What is transmission media? Explain.
2. What are the 2 major types of transmission media.