

6) Explain about different types of unguided transmission media.

Ans:- The different types of unguided transmission media are listed below:-

- Radio transmission
- Microwave transmission
- Infrared and Millimeter Waves
- Lightwave Transmission

#### • Radio Transmission

- They are easy to generate, can travel long distances, and can penetrate buildings easily.
- They are widely used for communication, both indoors and outdoors. Radio waves are omnidirectional.
- The properties of radio waves are frequency dependent. At low frequencies, radio waves pass through obstacles well.



→ The military also communicate in the HF and VHF bands.

### Microwave Transmission

→ Microwave communication is so widely used for long distance telephone communication, mobile phones, television distribution, and other uses that a severe shortage of spectrum has developed.

→ The main advantage is that no right of way is needed, and can bypass the telephone system and communicate directly.

→ It is relatively inexpensive.

### Infrared and Millimeter Waves

→ Unguided infrared and millimeter waves are widely used for short-range communication.

→ They are relatively directional, cheap and easy to build but have a major drawback: they don't pass through solid objects.

→ security of infrared systems against eavesdropping is better than that of radio systems precisely for this reason.

## Lightwave Transmission

- This scheme offers very high bandwidth and very low cost.
- It is also relatively easy to install
- The laser's strength, a very narrow beam, is also its weakness here.
- Laser beams cannot penetrate rain or thick fog, but they normally work well on sunny days.