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Topic: Major Assignment

Subject: Introduction to Computing

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(1)

ANS(1) Transmission Media.

A physical path b/w the transmitter and the receiver i.e. A channel through which data is sent from place to another.

⇒ Types of Transmission Media

Transmission Media is broadly

classified into the following types.

1) Guided Media

Guided Media is consist on three more parts which are following.

- 1) Twisted pair
- 2) Coaxial cable
- 3) optical fibre cable

(2)

### 1) Twisted pair cable:-

It consists of 2 separately insulated conductor wires wound about each other. Such pairs are bundled together in a protected sheath. They are mostly used transmission media. Twisted pair of two types.

### 2) Unshielded Twisted pair (UTP):-

This type of cable has the ability to block interference and does not depend on a physical shield for this purpose it is used for telephonic application.

### 3) Advantages:-

- Least expensive
- Easy to install
- High speed capacity.

⇒ Disadvantages:

- Susceptible to external interference
- lower capacity and performance
- Short distance transmission due to attenuation

2) Shielded Twisted pair (STP):

This type of cable consists of special jacket to block external interference. it is used in a fast-data-rate and voice and data channels of telephone lines.

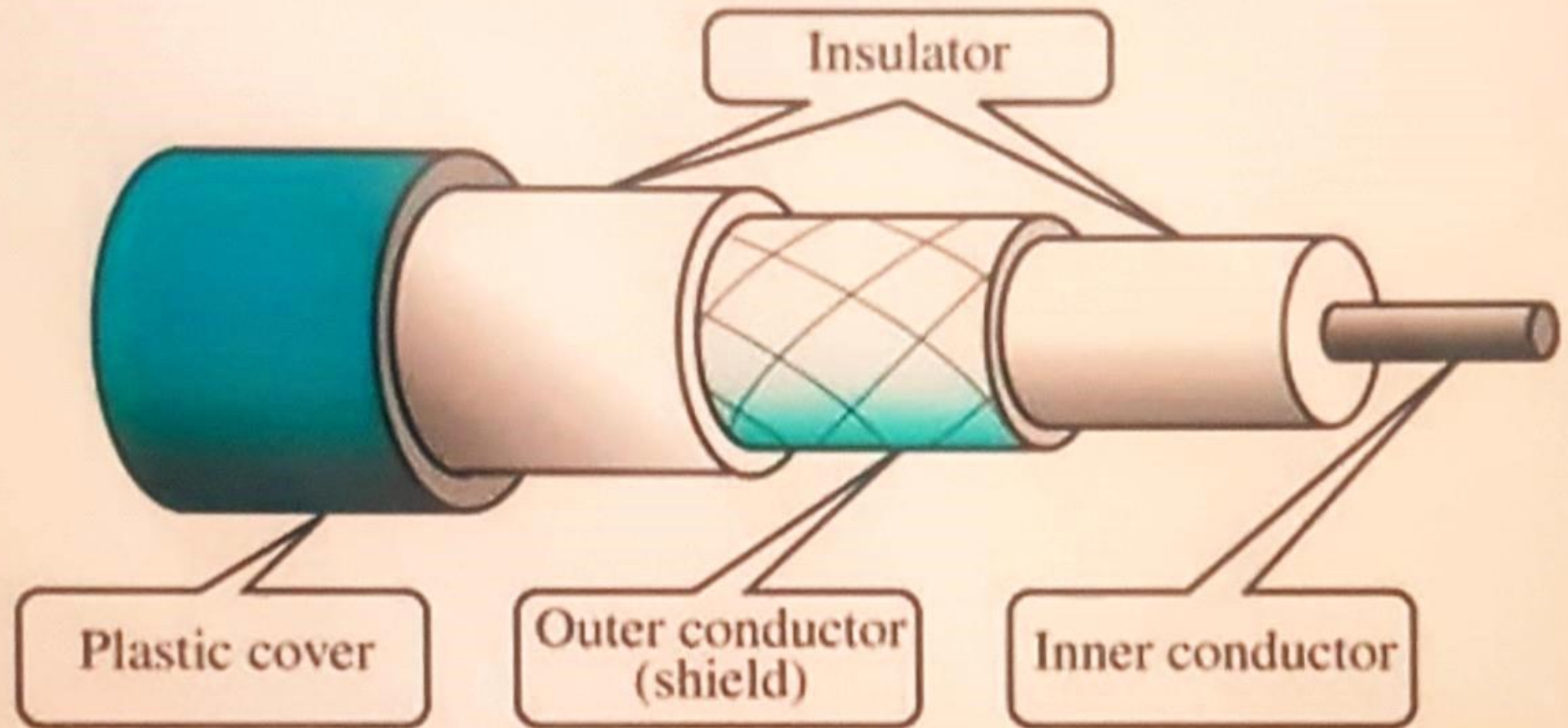
⇒ Advantages:

- better performance at higher data
- eliminate crosstalk
- faster

⇒ Disadvantages:-

- Difficult to install and manufacture
- more expensive
- Bulky

# Coaxial Cable



## 2) Coaxial cable-

It is an outer plastic covering 2 parallel conductors each having a separate protection cover. it transmit information in two modes, (dedicated cable bandwidth) and (cable bandwidth).

### ⇒ Advantages:-

- High bandwidth
- Better noise immunity
- easy to install and expand
- inexpensive

### ⇒ Disadvantages:-

- Single cable failure can disrupt the entire network

## 3) Optical fibre cable

in the uses of concept of reflection of light through a core made up of glass or plastic. The core is surrounded

(5)

by a less dense glass or plastic covering called cladding. it is used for large volume of data.

⇒ Advantages:

- increase capacity and bandwidth
- Light weight
- Resistance to corrosive material

⇒ Disadvantages:

- Difficult to install and maintain
- High cost
- fragile

(b)

## 2) Unguided Media:

It is also referred to as wireless

transmission media and no medium is required for transmission of electromagnetic signals.

### ⇒ Features:-

Signal is broadcasted through air

less secure

used for larger distances

unguided media divided into 3 steps

### i) Radio waves:

Radio waves are used for multicast

communication such as radio and television.

The frequency range 3kHz - 10GHz.



ii) Microwaves:-  
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It is used for unicast communication such as cellular telephone, satellite networks and wireless LANs.

iii) Infrared:-

It is used for short-range communication is a closed area using line-of-sight propagation

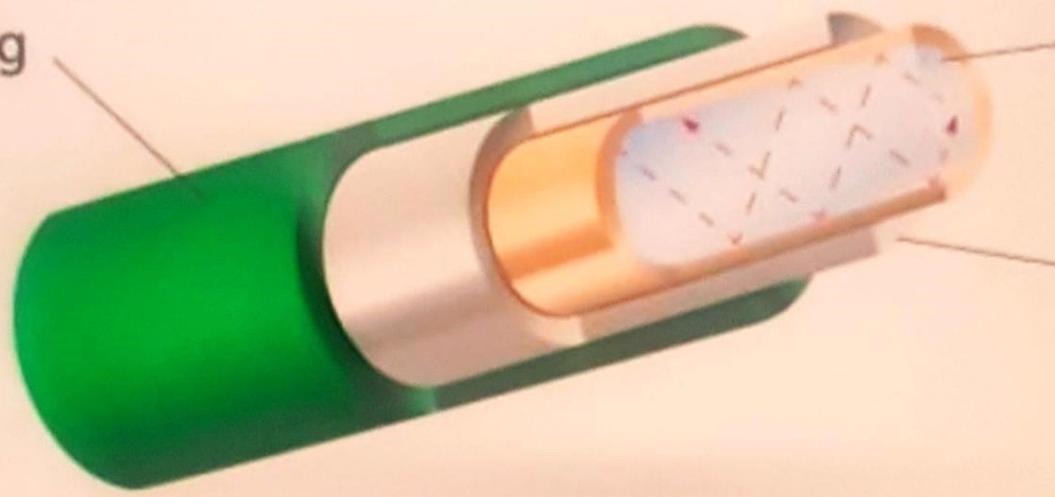
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# OPTICAL FIBER



Coating



Core

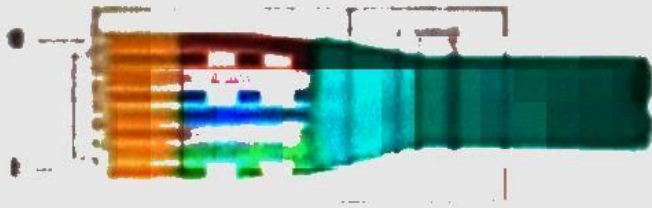
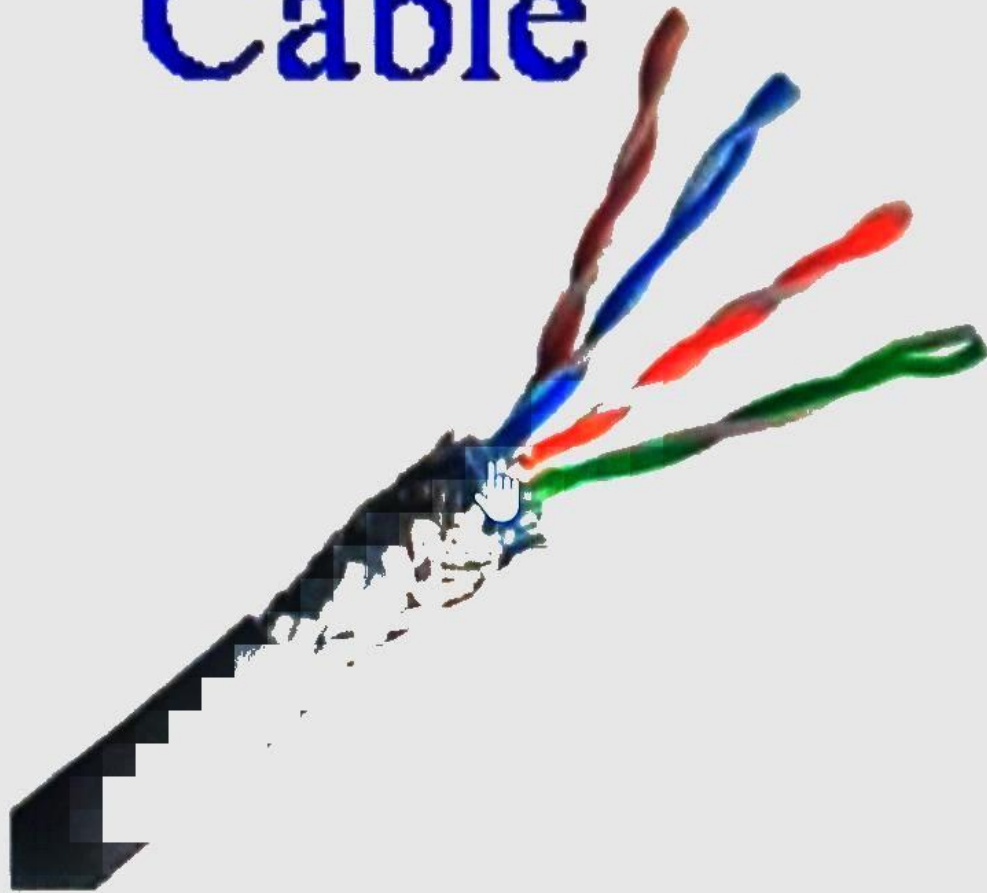
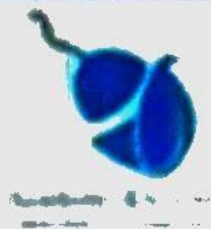
Cladding



507 x 456



# Twisted pair Cable



EIA/TIA 568A



EIA/TIA 568B