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Assignment computer application

Bs (MLT4th)

**Types of Transmission Media:**

There are two types of transmission media

Wired media

Wireless media

Wired Media:-

It is also referred to as Wired or Bounded transmission media. Signals being transmitted are directed and confined in a narrow pathway by using physical links

High Speed

Secure

Used for comparatively shorter distances

There are 3 major types of wired Media:

**(i) Twisted Pair Cable** –

It consists of 2 separately insulated conductor wires wound about each other. Generally, several such pairs are bundled together in a protective sheath. They are the most widely used Transmission Media. Twisted Pair is of two types:

1. **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 applications.

Least expensive

Easy to install

High speed capacity

Susceptible to external interference

Lower capacity and performance in comparison to STP

Short distance transmission due to attenuation

2. **Shielded Twisted Pair (STP):**

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

Better performance at a higher data rate in comparison to UTP

Eliminates crosstalk

Comparatively faster

Comparatively difficult to install and manufacture

More expensive

Bulky

(ii) Coaxial Cable –

It has an outer plastic covering containing 2 parallel conductors each having a separate insulated protection cover. Coaxial cable transmits information in two modes: Baseband mode (dedicated cable bandwidth) and Broadband mode (cable bandwidth is split into separate ranges). Cable TVs and analog television networks widely use Coaxial cables.

Advantages:

High Bandwidth

Better noise Immunity

Easy to install and expand

Inexpensive

Single cable failure can disrupt the entire network

**(iii) Optical Fiber Cable –**

It uses the concept of reflection of light through a core made up of glass or plastic. The core is surrounded by a less dense glass or plastic covering called the cladding. It is used for transmission of large volumes of data.

Increased capacity and bandwidth

Light weight

Less signal attenuation

● Immunity to electromagnetic interference

● Resistance to corrosive materials

Disadvantages:

● Difficult to install and maintain

● High cost

● Fragile

● unidirectional, i.e., will need another fiber, if we need bidirectional communication