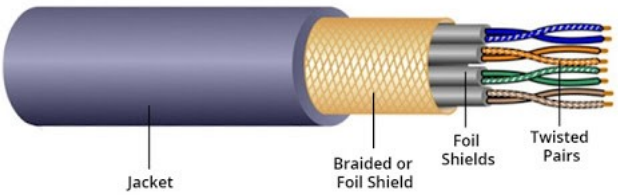
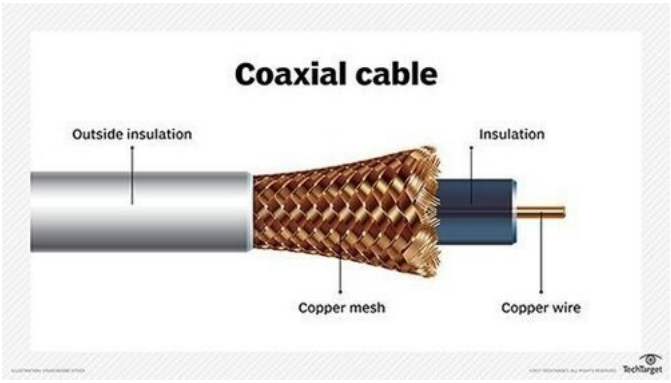
Assignment no 5

Cables and Connector.

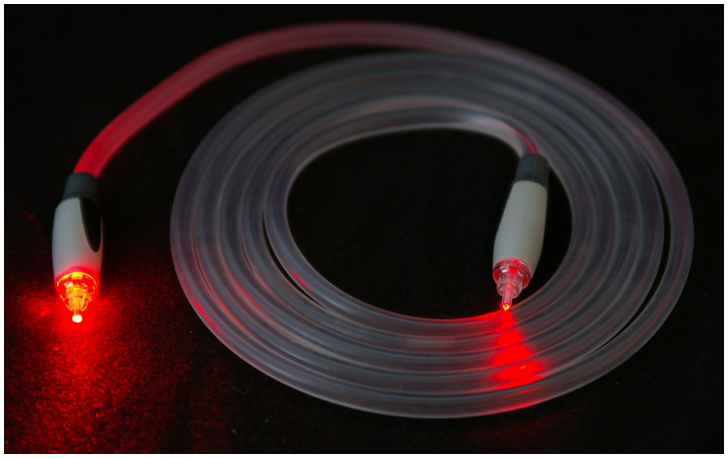
- **Twisted pair cable**:Twisted pair is the ordinary copper wire that connects home and many business computers to the telephone company. To reduce crosstalk or : induction between pairs of wires, two insulated copper wires are twisted around each other. Each connection on twisted pair requires both wires.



- **Coaxial cable**:Coaxial cable, or coax is a type of electrical cable consisting of an inner conductor surrounded by a concentric conducting shield, with the two separated by a dielectric (insulating material); many coaxial cables also have a protective outer sheath or jacket.



- **Fibre-optic cable**:A fiber-optic cable contains anywhere from a few to hundreds of optical fibers within a plastic casing. Also known as optic cables or optical fiber cables, they transfer data signals in the form of light and travel hundreds of miles significantly faster than those used in traditional electrical cables.



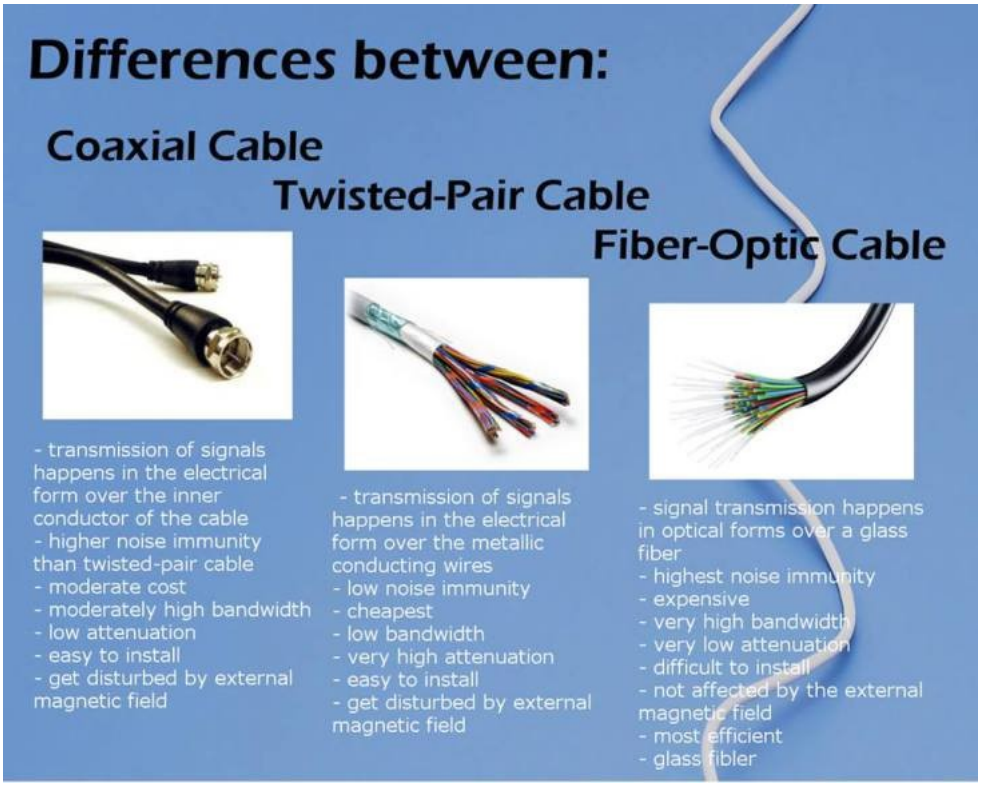
Uses of the Cables and where it is Used.

- **Twisted pair cable**:Twisted-pair cable is a type of cabling that is used for telephone communications and most modern Ethernet networks. A pair of wires forms a circuit that can transmit data. The pairs are twisted to provide protection against crosstalk, the noise generated by adjacent pairs.

- **Coaxial cable**:Coaxial cable is used as a transmission line for radio frequency signals. Its applications include feedlines connecting radio transmitters and receivers to their antennas, computer network (e.g., Ethernet) connections.

- **Fibre-optic cable**:A fiber optic cable is a network cable that contains strands of glass fibers inside an insulated casing. They're designed for long-distance, high-performance data networking, and telecommunications. Compared to wired cables, fiber optic cables provide higher bandwidth and transmit data over longer distances

Difference Between..



Speed Bandwith and Distance.

- **Fiber Optic Cabel**

i. **speed:** 10/100/1000 Mbps, 10/40/100/200 Gbps

ii. **Bandwith:** Up to 4700 MHz

iii. **Distance:**Up to 80km

- **Twisted pair cable**

i. **speed :**Up to 10 Gbps

ii. **bandwith :**Up to 4700 MHz

iii. **distance :**Up to 100m

- **Coaxial cable**

i. speed : -

ii. **bandwith:**750 MHz (default)

iii. distance: Up to 500m

Advantages and Disadvantages.

- **Twisted Pair**

Advantages : 1. Cheaper and far easier to splice

2.Less susceptible to electrical interference caused by nearby equipment or wires.

3.In turn are less likely to cause interference themselves.

4.Because it is electrically "cleaner", STP wire can carry data at a faster speed.

Disadvantages : 1. STP wire is that it is physically larger and more expensive than twisted pair wire.

2. STP is more difficult to connect to a terminating block.

- **Coaxial Pair**

Advantages : 1. Coaxial cable can support greater cable lengths between network devices than twisted pair cable.

2. Thick coaxial cable has an extra protective plastic cover that help keep moisture away.

Disadvantages : 1. Thick coaxial is that it does not bend easily and is difficult to install.

- **Fiber Optic**

Advantages : 1. One single mode fiber can replace a metal of time larger and heavier.

2. Multi-mode optical cable has a larger diameter and can be used to carry signal over short distance.

Disadvantages : 1. Fiber optic versus metal cable is that it is difficult to make connections to fiber optic cable.

2. The optical fiber must be highly polished to allow light to pass with little loss.

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