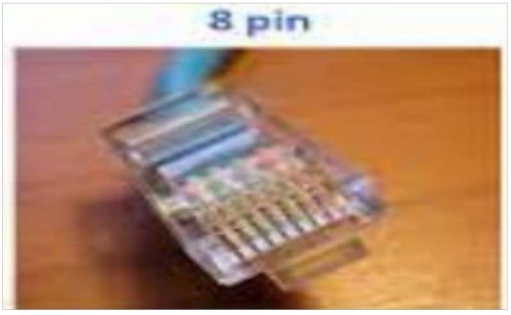
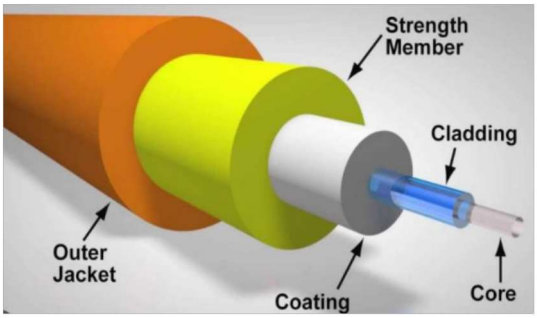
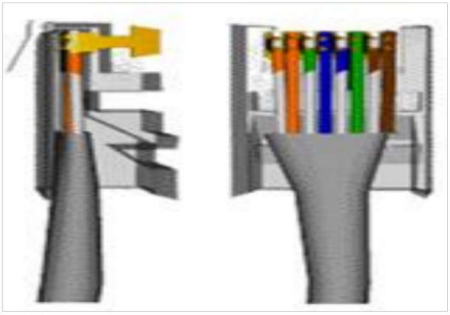
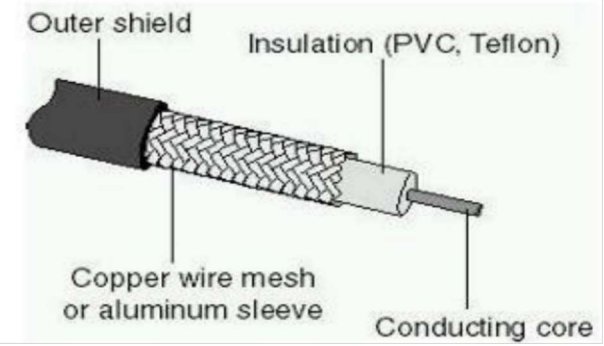
1.C – Study of Cables & it's Color codes

Term	Description	Cross Sectional Diagram
BNC	British Naval Connector is the connector used with coaxial cables.	
RJ – 11	A registered jack 11 is a telephone connector used on modern telephone lines.	
RJ – 45	A registered jack 45 is an eight-wire connector used to connect computers to category 5 unshielded twisted pair (UTP) cables in a network.	
Fiber Optic Cable	Fiber optic cable uses light to transmit information across a network. The core of the cable is made of glass, which is protected by a layer of gel or plastic. A plastic cover surrounds the entire cable.	
UTP	Unshielded Twisted-Pair Cable is network cable that consists of up to 4 pairs of wires. Each pair is twisted around each other at a different rate and the entire cable is encased in a protective plastic covering. The twisting of the wires in cables is to help prevent EMI (Electro- Magnetic Interference).	

Coaxial Cable	Thin coaxial cable is often referred to as ThinNet. It consists of a copper wire surrounded first by a layer of plastic, then a layer of metal mesh and a final layer of protective plastic. It is used for peer-to-peer networking	

NETWORK DEVICES:

1. **Repeater:** Functioning at Physical Layer. A**repeater** is an electronic device that receives a signal and retransmits it at a higher level and/or higher power, or onto the other side of an obstruction, so that the signal can cover longer distances. Repeater have two ports, so cannot be use to connect for more than two devices.

2. **Hub:** An **Ethernet hub**, **active hub**, **network hub**, **repeater hub**, **hub** or **concentrator** is a device for connecting multiple twisted pair or fiber optic Ethernet devices together and making them act as a single network segment. Hubs work at the physical layer (layer 1) of the OSI model. The device is a form of multiport repeater. Repeater hubs also participate in collision detection, forwarding a jam signal to all ports if it detects a collision.

3. **Switch:** A**network switch** or **switching hub** is a computer networking device that connects network segments. The term commonly refers to a network bridge that processes and routes data at the data link layer (layer 2) of the OSI model. Switches that additionally process data at the network layer (layer 3 and above) are often referred to as Layer 3 switches or multilayer switches.

4. **Bridge:** A **network bridge** connects multiple network segments at the data link layer (Layer 2) of the OSI model. In Ethernet networks, the term *bridge* formally means a device that behaves according to the IEEE 802.1D standard. A bridge and switch are very much alike; a switch being a bridge with numerous ports. *Switch* or *Layer 2 switch* is often used interchangeably with *bridge* .Bridges can analyze incoming data packets to determine if the bridge is able to send the given packet to another segment of the network.

5. **Router:** A **router** is an electronic device that interconnects two or more computer networks, and selectively interchanges packets of data between them. Each data packet contains address information that a router can use to determine if the source and destination are on the same network, or if the data packet must be transferred from one network to another. Where multiple routers are used in a large collection of interconnected networks, the routers exchange information about target system addresses, so that each router can build up a table showing the preferred paths between any two systems on the interconnected networks.

6. **Gate Way:** In a communications network, a network node equipped for interfacing with another network that uses different protocols.

• A gateway may contain devices such as protocol translators, impedance matching devices, rate converters, fault isolators, or signal translators as necessary to provide system interoperability. It also requires the establishment of mutually acceptable administrative procedures between both networks.

• A protocol translation/mapping gateway interconnects networks with different network protocol technologies by performing the required protocol conversions.