

## Assignment 1

Q1 Explain the specification and functionality of RJ 45 connector, switch, cable tester, crimping tool, Cat 5 cable.

Ans RJ 45 connector:  
8 pin RJ-45 connector through hole PCB mount socket and compatible with all CAT and UDP cable. Commonly used in ethernet connection. Transmit data over long distance. Transmit data in noisy environment and supports over ethernet.

### Switch:

Switch are networking devices operating at layer 2. They connect devices in a network and use switching to send, receive or forward data packets. Performs necessary checks to send data to appropriate device. Supports unicast, multicast and broadcast communications.

### Cat 5 cable:

Used in structured cabling for computer networks. Performance ranging upto 100 MHz. Attenuation 22 dB.

### Cable Tester:

Designed for testing opens, shorts and miswired cable installations. Can work with various cables and connectors. LED for error indication.

### Crimping Tool:

Used to customize cables i.e. crimp, strip and cut. Used to make cold weld joints.

Q2 What is topology? Explain its types.

Ans Topology is the arrangement with which computer systems or network devices are connected to each other. Topologies may define both physical and logical aspect of the network.

Types of topology:

a) Bus Topology:

All devices are connected by one single cable. Cable break can disable entire network.

b) Ring Topology:

A frame travels around the ring stopping at each device on the network.

c) Star Topology:

All nodes are individually connected to a central connection point.

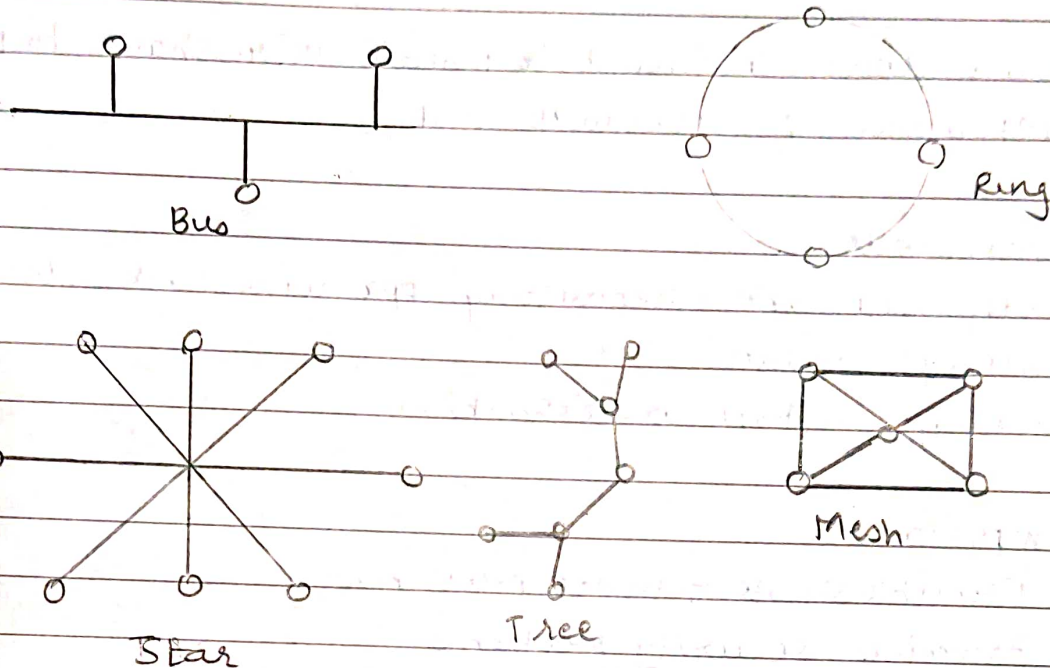
d) Tree Topology

Uses the extended star topology

e) Mesh Topology

Each node is connected to each other.





Q3 Explain functionality of switch, bridge, hub, router, Brouter.

Ans Switch: Switch is used to connect multiple host to a network. It forwards a message to a specific host.

Bridge: Bridge is used to connect two sections of networks. It also examines the incoming traffic and whether to filter it or forward it.

Hub: Hub is used to connect multiple devices. Data packet from one port is sent to all other ports.

Router: Router is a connecting device which directs packets on base of the destinations address.

Brouter: It functions as both router and bridge.

Q4 Write down command to install Wireshark tool. Explain importance of Wireshark tool

Ans Commands :

```
sudo add-apt-repository ppa:wreshark-dev/stable
```

```
sudo apt update
```

```
sudo apt install wireshark
```

Importance:

- Troubleshoots network problems
- Examines security problems.
- Verifies network applications
- Debug protocol implementations