## 1.What are Computer Networking Components?

- There are several components that assist in the making of computer networks known as computer network components.
- With these components in place, devices can easily share information with one another. Some components are –
- **Router :-**

  A router is an intermediary device that connect two or more devices to transfer data packets from one device to another.

  It uses routing protocols and algorithms to find best destination path for data packets according to its address and other factor.
- **Switch:-**

  A switch is used to transmit data between node inside network.

  It used MAC address to identify source and destination of each frame and send only independent recipient. Data transmission between two different network nodes is called “switching”.
- **Hub :-**

  A hub is an intermediary device that connects multiple end devices on the same networks and broadcasts data bits to all of them. It acts as distributor center.

  A computer makes request to the hub via cable when it needs data from the networks or a particular computers .The request will send to the hub, which will relay it to the network. The computer on the network must then determine whether or not the information being broadcast is intended for them.
- **Repeater:-**

  A device that amplifies and regenerates data signals on a networks.

  It operates at the physical layer of OSI model and does not providing any filtering or forwarding function.

  It is used to extend the range of the network or overcome signal authentication.

  Because of the signal may be sent across the greater distance without decreasing the quality .There are repeaters in WAN.
- **Network interface card(NIC) :-**

  A NIC is the physical component of the computer network that allows communication between computers.

  It sometimes referred to as a network interface controller or network adapter

  A NIC is required to connect to and exchange the data with computers ,servers, routers, and switches on a networks .NIC can be wired or wireless.

❖ **Firewall :-**

A firewall monitors and controls a network's incoming and outgoing traffic based On predefined rules and policies.

It operates at different OSI model layers depending on its type and functionality.

It performs function such as packet filtering stateful inspection, proxy service, NAT (network address translation), VPN (Virtual Private Network),etc.

❖ **Modem:-**

For transmission across an analog medium like a telephone line or cable, digital data must be converted via networking device called "Modem"

It is used to connect a computer or a router to an internet services provider (ISP) Via telephone lines.

It is responsible for the conversation of digital signals originating from computers or a network into analog signals that are capable of being transmitted over a telephone cable line.

Cable modem, digital subscriber line modem, and dial-up modems are all examples of the many varieties of available modems.

❖ **Access point :-**

An access point allows wireless end device to connect to a wired or wireless network.

It acts as bridge between different type of networks or media.

It also performs function such as authentication, encryption, channel selection, etc.

❖ **Network Cable:-**

A network cable is a physical medium that carries data signals between devices and network.

There are different types of networks cables such as coaxial cable, twisted pair cable, fiber optic cable.