ASSIGNMENT 2

1. Different types of networks:

- LAN(Local Area Network)
- WAN(Wide Area Network)
- MAN(Metropolitan Area Network)
- PAN(Personal Area Network)

2. Shielded Twisted Pair(STP)

Shielded Twisted Pair(STP) cable was originally designed by IBM for token ring networks that include two individual wires covered with a foil shielding, which prevents electromagnetic interference, thereby transporting data faster.

Unshielded Twisted Pair(UTP)

Unshielded Twisted Pair cable is a 100 ohm copper cable that consists of 2 to 1800 unshielded twisted pairs surrounded by an outer jacket.They have no mettalic shield.This makes the cable small in diameter but unprotected against electrical interference.

3. Difference between baseband and broadband transmission:

Baseband transmissionp;

- Digital signalling
- Frequency division multiplexing is not possible
- Baseband is bi-directional transmission
- Short distance signal travelling
- Entire bandwidth is for single signal transmission
- Example:Ethernet is using Basebands for LAN

Broadband transmission:

- Analog signalling
- Transmission of data is unidirectional
- Signal travelling distance is long
- Frequency division multiplexing possible

- Simultaneous transmission of multiple signals over different frequencies
- Example:Used to transmit cable TV to premises

4. Difference between a hub, modem, router and a switch:

Hub:

- Unlike switches, hubs broadcast data to all ports, which is insufficient, so hubs are basically a multiport repeaters.

Modem:

- Stands for "modulating-demodulating"
- Modems are hardware devices that allow a computer or another device, such as a router or switch, to connect to the internet. They convert or "modulate" an analog signal from a cable wire to digital data (1s and 0s) that a computer can recignize.
- simply send traffic from point A to point B without further manipulation.

Routers:

- Routers are responsible for sending data from one network to another.
- Work at layer 3(Network) of the)OSI model, which deals with IP addresses.
- Typically, routers today will perform the functionality of both a router and a switch that is, the router will have multiple ethernet ports that devices can plug into.

Switch:

- They use the MAC address of a device to send data only to the port the destination device is plugged into.
- Work at Layer 2(Data Link) of the OS model, which deals with MAC addresses.

5. when you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Yes, that's because MAc addresses are hardwired into the NIC circuitry, not the PC. This also means that a PC can have a different MAC address when another one replaced the NIC card.

6. When troubleshooting computer network problems, What common hardware-related problems can occur?

A large percentage of a network is made up of hardware. Problems in these areas can range from malfuctioning hard devices, broken NIC's, and even hardware startups.

7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

The best solution is to install anti-virus on all the computers in the network. This will protect each device from the other in case some malicious user tries to insert a virus into the servers or legitimate users.

8.Static IP :

An Internet Protocal(IP) addrerss is a unique number assigned to each computer on a network. A computer on the internet can have a static IP address, which means it stays the same over time, or a dynamic IP address, which means the address can change over time.\

Dynamic IP:

A dynamic IP address is an IP address that an ISP lets you use temporarily. If a dynamic address is not in use, it can be automatically assigned to a different device.

Difference between IPV4 and IPV6:

IPV4:

- IPV4 is a 32 bit IP address.
- IPV4 is a numeric addressing method
- IPV4 binary bits are separated by a dot(.)

IPV6:

- IPV6 is a 128 bit IP address
- IPV6 is an alphanumeric addressing method
- IPV6 binary bits are separated by a colon(:)

9. TCP/IP model:

- TCP stands for Transmission Control Protocol
- IP stands for Internet Protocol
- TCP/IP reference model is a four-layered suite of communication protocols.
- The four layers in the TCP/IP protocol suites are

a. Host-to-Network layer

b. Internet layer

c. Transport layer

d. Application layer

- It was developed by DoD(Department of Defence) in the 1960s
- It is named after the two main protocols that are used in the model namely, TCP and IP.

10. **Web Browser:**

A web browser, or simply "browser" is an application used to access and view websites.

Examples:

- Microsoft Internet Explorer,
- Google Chrome,
- Mozilla firefox,
- Apple Safari,
- Opera.

11. **Search Engine:**

A search engine is a wed-based tool that enables users to locate information on the World Wide Web.

Examples:

- Google
- Yahoo!
- MSN search

12. **Internet:**

The internet is a vast network that connects computers all over the world. Through the Internet, people can share information and communicate from anywhere with an Internet connection.

WWW(World Wide Web):

World Wide Web, which is also known as Web, is a collection of websites or web pages stored in web servers and connected through the internet.

Uses of Internet in Our daily life:

The internet is very much useful in our daily life. For example, it helps us to see our notifications and emails. Apart from this, people can use the internet for money transfers, shopping order online food, etc.

13. **Internet Service Provider:**

An Internet Service Provider(ISP) is a company such as AT&T, Verizon, Comcast, or Spectrum that provides Internet access to companies, families, and even mobile users.

Example:

Rank	ISP	Net Addition (Wireline Subscribers)
1	Jio	237,411
2	Airtel	126,937
3	Vi	3100
4	BSNL	-67,350

14. Difference between MAC address, IP address and port address:

MAC address:

A MAC address is assigned to the network interface card by the manufacture and is used for communication within the local area network. It is globally unique address.

IP adress:

An IP adress is used for communication within the local area network used for communication between networks(usually through the Internet).

Port address:

Port numbers are used as portof IP communications to determine which program the communication is to or from.

15. How do we view my Internet browser's history:

- Go to your Google Account.
- On the left navigation panel, click Data and Privacy.
- Under "History settings" click My activity.
- To view your activity: Browse your activity, organized by day and time. At the top, use the search bar and filters to find specific activity.