ASSIGNMENT - 2

1.
- Local Area Network (LAN)
- Wide Area Network (WAN)
- Metropolitan Area Network (MAN)
- Wireless Local Area Network (WLAN)
- Campus Area Network (CAN)
- Storage Area Network (SAN)
- Virtual private Network (VPN)
- Peer-to-peer Network (P2P)
- Client-Server Network
- Internet.

2.
☑ Shielded Twisted pair (STP) -
STP cables have an additional layer of shielding around the individual pairs of twisted wires. The shielding is typically made of foil or braided metal, such as copper. This shielding helps to reduce the effects of EMI and RFI, which can degrade signal quality and cause data transmission errors.

☑ Unshielded Twisted pair (UTP) -
UTP cables consist of twisted pairs of wires without any additional shielding. The wires are twisted together in a specific pattern, which helps to cancel out electro-magnetic interference. However, UTP cables are more susceptible to external interference compared to STP cables.

3. Difference between baseband and broadband transmission lies in the use of frequency range.

Baseband transmission uses the entire bandwidth for a single signal, while broadband transmission devides the bandwidth into multiple channels to transmit multiple signals. Simultaneously.

Baseband transmission is commonly used in Ethernet networks, while broadband transmission is used in applications like cable television and DSL.

4. A hub is a basic device that connects multiple devices in a network but lacks intelligent data forwarding capabilities.

A modem connects a network to an ISP to enable internet connectivity.

A router connects multiple networks together and determines the best path for data transmission.

A switch connects devices within a Local network and intelligently forwards data packets to the appropriate recipient based on MAC addresses.

5. No, the MAC addresses is tied to the Network Interface card (NIC) itself. and is not transferred when you move the NIC from the one PC to another. The MAC address is a unique identifier assigned to a network interface at the time of manufacturing and it remains associated with specific NIC throughout its Lifetime.

6. When trouble shooting computer network problems, the common hardware-related problems are —

- Faulty cables / connectors.
- Network Interface card (NIC) issues.
- Switch / Hub Malfunctions.
- Router configuration / Failure.
- Modem problems.
- power supply Issues.
- Wireless Signal Interferonce.
- Network Server / Storage failure.

7. By installing antivirus Software on both. Workstations and Servers, you establish multiple Layers of defense. Each endpoint, including workstation and Serves, contributes to the Overall Security Posture of the network It helps protect against threats originating from external Sources as well as those that may propagate internally.

8. ☑ Static IP :-

A static IP address is manually assigned to a device and remains constant over time. It is configured by an administrator or user and does not change unless it is modify manually. With a static IP, the device always uses the same IP address when connecting to the network or the internet.

☑ Dynamic IP :-

A dynamic IP address, as the name suggests, is automatically assigned to a device by DHCP server. When a device connects to a network, the DHCP server assigns an available IP address from a pool of addresses. The IP address lease is temporary and can change each time the device reconnects or after certain period of time.

☑ IPv4 and IPv6 differ in terms of their address space, address format, IP assignment methods, and features.

IPv6 offers a significantly larger address space and incorporates advancements to accommodate the evolving needs of the internet and the growing number of connected devices.

9. ☒ TCP / IP model :-

The TCP / IP model, also known as the internet protocol suite, is a conceptual framework that defines a set of protocals, used for communication in computer network. It stands for transmission control protocal / Internet protocol and consists of four Layers.

- The Network Interface Layer.
- Internet Layer.
- Transport Layer.
- Application Layer.

10. ☒ Web Browser :-

A web browser, commonly referred to as a browser, is a software application that enables users to access and interact with information on the World wide web (WWW). It allows users to view web pages, navigate through websites, and interact with various web based content such as text, images, videos and application.

Here some popular Examples of web browsers -

- Google Chrome.
- Mozila Firefox.
- Microsoft Edge.
- Apple Safari.

11. Search Engine :-

A search Engine is a web based tool or software application designed to help users find information on the internet. It allows users to search for specific content, websites, etc.

Search engine retrieve and display relevent search results from their vast database. which are compiled by crawling and indexing web pages from across the internet.

Here are a few examples of popular search engines :-

- Google.
- Bing.
- Yahoo
- Baidu.
- yandex.

12. Internet :-

The Internet is a global network of interconnected computers and devices that enables communication and info. sharing. It is a vast network infrastructure that connects millons of devices world wide. including computers, servers, routers, and other devices.

World Wide Web (WWW) :-

The World Wide Web, often referred to as the web, is a collection of interconnected documents and resources accessible via the internet. It is a system of linked hyper-text documents that are identified by unique URL.

☑ Now, let's discuss the uses of the Internet in our daily lives :-

- communication.
- Information Retrieval.
- online shopping / E-commerce.
- Entertainment.
- online Banking / Financial services.
- Education / E-Learning.
- News / information consumption.
- work / productivity.

13. ☑ Internet service provider :-

It's a company or organization that provides individuals, businesses, and other entities with access to the internet. ISPs connect users to the internet by providing various services such as internet connectivity, email, web hosting, domain registration, and other related services.

In India, several ISPs provide internet services across the country. Here are some prominent ISPs in India -

- Bharat Sanchar Nigam Limited (BSNL)
- Bharti Airtel Limited
- Reliance Jio
- ACT Fibernet.
- Hathway.
- You Broadband.

14. MAC addresses are unique hardware addresses assigned to network interfaces, IP addresses are numeric lable identifying devices in a network. and port addresses are used to direct data packets to specific applications or services running on a device.

MAC addresses operate at the data Link Layer, IP addresses operate at the network Layer, port addresses operate at the transport Layer of the network protocol stack.

15. To view your internet browser's history, the method may vary slightly depending on the browser you are using. Here are the general steps for viewing browsing history in popular browsers —

- Google chrome —
  - click on the three-dot menu icon in the top-right corner.
  - Hover over "History" in the dropdown menu.
  - Alternatively you can press ctrl + H on your keyboard.
- Mozila Firefox —
  - press ctrl + shift + H on your keyboard.
- Microsoft Edge —
  - press ctrl + H on your keyboard.
- Safari (Mac) —
  - press command + Y on your key board.

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