

Q1 What are the different types of networks?

Types of Networks

Networks can be classified into several types based on their geographical scope, size, topology, and functionality. Here are some of the main types of networks:

① Local Area Network (LAN)

A LAN connects devices in a limited geographical area, such as a home, office building, or campus. It is typically owned and managed by a single organization.

② Wide Area Network (WAN)

A WAN covers a larger geographical area, such as a city or country, and connects multiple LANs together. It is often used by organizations with multiple locations.

③ *Metropolitan Area Network (MAN)*

A MAN is a high-speed network that connects devices in a metropolitan area, such as a city or town. It is typically used by organizations that require high-speed connectivity over a larger area.

④ Virtual Private Network (VPN)

A VPN is a network that uses encryption and other security measures to create a secure and private connection between devices over the internet. It is often used by organizations to allow remote workers to access their network securely.

⑤ Hybrid Network

A hybrid network is a network that combines different types of networks, such as wired

and wireless network, to provide a more flexible and scalable infrastructure.

Q2 → Explain the shielded twisted pair (STP) and Unshielded twisted pair (UTP)

Shielded Twisted Pair (STP) and Unshielded Twisted Pair (UTP)

Twisted pair cables are a type of copper wire cable used for Ethernet connections. They consist of two insulated copper wires twisted together to reduce electromagnetic interference (EMI) and improve signal quality. There are two main types of twisted pair cables: Shielded Twisted Pair (STP) and Unshielded Twisted Pair (UTP).

Shielded Twisted Pair (STP)

STP cables have a braided or foil shield around the twisted pair wires, which provides additional protection against electromagnetic interference (EMI). The shield acts as a barrier, preventing external electromagnetic signals from penetrating the cable and interfering with the data transmission.

Unshielded Twisted Pair (UTP)

UTP cables do not have a shield around the twisted pair wires. They are less expensive and more widely used than STP cables.

Comparison of STP and UTP:

	Shielding	EMI/RFI	Cost	Flexibility	Noise Environment	Installation
STP =	Yes	Better	Higher	Less	High-noise	More difficult
UTP =	No	Worse	Lower	More	Low-noise	Easier

3. Difference between Broadband and Baseband

Ans ① Broadband - system use modulation techniques to reduce to reduce the effect of noise in the environment. Broadband transmission employs multiple channel unidirectional transmission using a combination of phase and amplitude modulation.

② Baseband - is a digital transmitted on the medium using one of the signal codes like NRZ, RZ, Manchester, biphasic, m code etc. called baseband transmission. There are the following difference between Broadband and Baseband transmission.

① what is the different between a hub, modem router and a switch?

(A) Hub - A hub is a hardware device used at the physical layer to connect multiple device in the network. Hub are widely used to connect LANs.

(B) modem - modem stand for modulator / Demodulator. The modem is defined as a networking device that is defined as a networking device that is used to connect connect devices. Connected in the network.

(C) router - A router is a device that connects to or more packet switched network to or networking. it serves two primary function managing traffic between these network by forwarding data packets to there allowing multiple devices to use the same internet connection.

(D) switch - A Network switch connect devices in a network switch to each other enabling them to talk by exchanging data packets.

4. What is the difference between a hub, modem, router and a switch?

- (A) Hub → A hub is a hardware device used at the physical layer to connect multiple devices in the network. Hubs are widely used to connect LANs.
- (B) Modem → Modem stands for Modulator/Demodulator. The modem is defined as a networking device that is used to connect devices connected in the network to the internet.
- (C) Router → A router is a device that connects to or more packet-switched networks to or subnetworks. It serves two primary functions: managing traffic between these networks by forwarding data packets to their intended IP addresses, and allowing multiple devices to use the same internet connection.
- (D) Switch → A network switch connects devices in a network to each other, enabling them to talk by exchanging data packets.

Q5. When you move the NIC card from one PC to another PC, does the MAC address get transferred as well?

Network interface card (NIC) from one PC to another, the MAC address does not necessarily get transferred automatically.

- (a) MAC Address is tied to the NIC. The MAC (Media Access Control) address is a unique identifier assigned to a Network interface card (NIC) by the manufacturer. It is stored in the NIC's firmware and is used

to identify the device at the data link layer of the OSI model.

⑧ Mac Address is not stored on the PC. → The MAC address is not stored on the PC's motherboard or hard drive. Instead, it's stored on the NIC itself.

(c) - Moving the NIC, not the MAC address → when you move the NIC from one PC to another, you're physically transferring the hardware component, not the MAC address.

Q6. When troubleshooting computer network problem, what common hardware-related problems can occur?

Troubleshooting computer network issues can be a complex task, but it can be broken down into a step by step process. Here's a general framework to help you identify and resolve common network problems.

- No internet connection:
- slow network speeds
- check network configuration.

Q7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus Program?

When it comes installing an antivirus program the location of the installation can impact its effectiveness. Here's a breakdown of the best place to install an antivirus program:

On the Local Machine (Client-side)

- Advantages:
- Real-time protection: The antivirus program can monitor the system in real-time, detecting and blocking malware as it attempts to infect the system.
- Local scanning: - The antivirus program can scan the local machine for malware providing an additional layer of protection

9. Discuss TCP/IP model in detail?

The TCP/IP model, also known as the internet protocol suite, is a conceptual framework that outlines the architecture of the internet. It is a set of communication protocols that enable devices to communicate with each other over the internet. The TCP/IP model is a simplified version of the OSI (Open System Interconnection) model, and it is widely used in modern computer networks.

Ans. 8

Static IP : If your computer is hosting a web server its ip address is what identifies it to the rest of the internet. 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 a temporary address for devices connected to a network that continually changes over time. an internet protocol (ip) address is a number used by computers to identify host and network interfaces as well as different locations on a network.

Difference between IPv4 and IPv6?

the most obvious difference is that ipv4 uses a 32 bit address while ipv6 uses a 128 bit address this means that ipv6 offers 1028 times more addresses than than ipv4. which essentially solves the scanning out of addresses problem. (at least the foreseeable future)

Q10. What is a web Browser (Browser)? Give some example of browsers.

A web browser, also known as a browser is a software application that allows users to access and view websites on the network. It acts as an interface between the user and the world wide web, enabling user to navigate, search and interact with online contents. A web browser retrieves and displays web pages, which are written in HTML, CSS, and Java Script.

Example :-

- Google Chrome
- Mozilla Firefox
- Microsoft Edge.
- Apple Safari.
- Opera.
- Internet Explorer
- Brave

Q(11) what is a search Engine?

Ans A search engine is a software system designed to search for information on the internet. It allows users to search for specific keywords, phrases, or topics, and returns a list of relevant results. Usually in the form of web pages, images, videos, or other types of content.

examples

Google, Bing, DuckDuckGo, Yahoo! Search

Q(12) what is the internet & www? what are the use of internet in our daily life?

Ans The internet is a global system of interconnected computer networks that use the Internet Protocol (IP) to link devices worldwide. ~~It is a network~~

The world wide web (www or web) is a system of interlinked hypertext documents that can be accessed via the Internet.

Uses of the internet in our Daily Life

- ① Communication
 - ② Information and Education
 - ③ Entertainment
 - ④ Commerce and Finance
 - ⑤ Health and wellness
- Q(14) Discuss the difference between MAC address, IP address and Port address.

Ans

Ans 14 Difference between MAC Address, IP Address, and Port Address

In computer networking three types of addresses are used to identify devices, route traffic, and facilitate communication: MAC address, IP address, and Port address. While they are related, each serves a distinct purpose and operates at different layers of the OSI model.

Q13 An Internet Service Provider (ISP) is an organization that provides various services related to accessing, using, managing, or participating in the internet.

• ISP example in India

(1) Bharat Sanchar Nigam Ltd (BSNL)

2 Bharti Airtel Limited

3 Reliance Jio

4 Vodafone Idea

Q15 How do we view my internet browser's history?

Viewing your internet browser's history

Google Chrome:

- 1 open Google Chrome on your computer,
- 2 click on the three vertical dots in the top right corner of the browser window.
- 3 Click on History from the drop-down menu.
- 4 Click on History again from the sub-menu.
- 5 you will see a list of all the websites you've visited, including the date and time of each visit.