

1) What is a network?

Ans - A network comprises two or more electronic devices connected together in order to share resources , exchange files , exchange data and allow communication. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams.

2) Explain type of network-- LAN, MAN, WAN?

Ans - The main three types of network connectivity in networking are

LAN - Local Area network

-A Local Area Network (LAN) is a network that is confined to a relatively small area. It is generally limited to a geographic area such as a writing lab, school, or building

In simpler words it can also be said that 2 more more computers connected in the same network are called under the local area network.

MAN - Metropolitan Area Network

- When two or more LAN are connected together it is termed as MAN

WAN - Wide Area Network

- When two or more MAN connected together.

3) What is the Internet?

Ans - The network formed by the co-operative interconnection of millions of computers, linked together is called the Internet.

4) Define Network topologies.

Ans - In Computer Network ,there are various ways through which different components are connected to one another. Topology is the way that defines the structure, and how these components are connected to each other.

There are multiple types of network topologies

- ★ Bus topology.
- ★ Ring topology
- ★ Star topology
- ★ Hybrid topology

5) Explain the switch.

Ans - the Switch is a network device that is used to segment the networks into different subnetworks called subnets or LAN segments. It is responsible for filtering and forwarding the packets between LAN segments based on MAC address.

Switches have many ports, and when data arrives at any port, the destination address is examined first and some checks are also done and then it is processed to the devices. Different types of communication are supported here like unicast, multicast, and broadcast communication.

6) Explain router.

Ans - Routers allow devices to connect and share data over the Internet or an intranet. A router is a gateway that passes data between one or more local area networks (LANs). Routers use the Internet Protocol (IP) to send IP packets containing data and IP addresses of sending and destination devices located on separate local area networks. Routers reside between these LANs where the sending and receiving devices are connected. Devices may be connected over multiple router "hops" or may reside on separate LANs directly connected to the same router.

7) Explain DHCP Dynamic host configuration protocol Explain Domain Naming Services What is protocol?

Ans - DHCP - Protocol that automates the process of assigning IP address to devices in a network is known as DHCP. 67 and 68 are the port numbers for server and client respectively.

DNS - Domain Name system port number 53 , it translates human readable domain names into IP addresses .It allows web browsing by helping users access websites using domain names rather than IP addresses.

8) What is unicast multicast and broadcast?

Ans -

UNICAST - This type of information transfer is useful when there is a participation of a single sender and a single recipient. So, in short, you can term it a one-to-one transmission.

MULTICAST - In multicasting, one/more senders and one/more recipients participate in data transfer traffic. In this method traffic reclines between the boundaries of unicast (one-to-one) and broadcast (one-to-all).

BROADCAST - A communication where a message is sent from one sender to all receivers.

9) What is the OSI model?

Ans - The OSI model, created in 1984 by ISO, is a reference framework that explains the process of transmitting data between computers. It is divided into seven layers that work together to carry out specialized network functions, allowing for a more systematic approach to networking.

In order for human-readable information to be transferred over a network from one device to another, the data must travel down the seven layers of the OSI Model on the sending device and then travel up the seven layers on the receiving end.

10) What is port number?

Ans - Ports are standardized across all network-connected devices, with each port assigned a number. Most ports are reserved for certain protocols

11) Difference between TCP V/S UDP communications

Ans -

TCP - is a connection-oriented protocol. Connection orientation means that the communicating devices should establish a connection before transmitting data and should close the connection after transmitting the data TCP is reliable as it guarantees the delivery of data to the destination router. An acknowledgment segment is present. TCP is comparatively slower than UDP. Port number 17

UDP - User datagram protocol is the Datagram-oriented protocol. This is because there is no overhead for opening a connection, maintaining a connection, or terminating a connection. UDP is efficient for broadcast and multicast types of network transmission. The delivery of data to the destination cannot be guaranteed in UDP. No acknowledgment segment. UDP is faster, simpler, and more efficient than TCP. Port number 6.

12) What is flow control?

Ans - Flow control is a technique used to regulate data transfer between computers or other nodes in a network. Flow control ensures that the transmitting device does not send more data to the receiving device than it can handle. If a device receives more data than it can process or store in memory at any given time, the data is lost and needs to be retransmitted.

13) What is the difference between TCP IP model and OSI model?

Ans - OSI model = OSI stands for Open Systems Interconnection. It has 7 layers. It is low in usage. Delivery of the package is guaranteed in OSI Model. Replacement of tools and changes can easily be done in this model. It is less reliable than TCP/IP Model.

TCP/IP model = TCP/IP stands for Transmission Control Protocol/Internet Protocol. It has 4 layers. It is mostly used. It is horizontally approached. Delivery of the package is not guaranteed in TCP/IP Model. Replacing the tools is not easy as it is in OSI Model. It is more reliable than OSI Model.

14) What is a mac-address?

Ans - To communicate or transfer data from one computer to another, we need an address. In computer networks, various types of addresses are introduced; each works at a different layer.

MAC which stands for Media Access Control Address, is a physical address that works at the Data Link Layer. In this article, we will discuss addressing a DLL, which is the MAC Address.

15) What is an ip address? Difference between IPV4 and IPV6

Ans - All the computers of the world on the Internet network communicate with each other with underground or underwater cables or wirelessly. If I want to download a file from the internet or load a web page or literally do anything related to the internet, my computer must have an address so that other computers can find and locate mine in order to deliver that particular file or webpage that I am requesting. In technical terms, that address is called IP Address or Internet Protocol Address.

IPV4 - IPV4 has a 32-bit address length. Address representation of IPV4 is in decimal. IPV4 consists of 4 fields which are separated by addresses dot (.). IPV4 supports VLSM (Variable Length subnet mask). Example of IPV4: 66.94.29.13

IPV6 - IPV6 has a 128-bit address length. Address Representation of IPV6 is in hexadecimal. IPV6 consists of 8 fields, which are separated by a colon (:). IPV6 does not support VLSM. Example of IPV6: 2001:0000:3238:DFE1:0063:0000:0000:FEFB.