• **What is network?**

* Network (Networking) no arth che ek system je dvaara be ke vadhare devices (computers, mobile phones, printers, etc.) ek bija sathe connect thai shake ane information share kare.

**• Explain type of network-- LAN, MAN, WAN?**

* 1.LAN (Local Area Network)
* 2 ke 2 thi vadhre computer same network ma connect hoy tene LAN kahevay.
* Ex:- college campus

2. MAN (Metropolitan Area Network)

- 2ke 2 thi vadhare LAN network ma connect hoy tene MAN kahevay.

- Ex:- ek city nu cable TV network

3. WAN (Wide Area Network)

* 2 ke 2 thi vadhre MAN network ma connect hyo tene WAN kahevay.
* Ex:- Internet, bank network

**• What is Internet?**

* Internet ek worldwide network che, je lakhon-crodo computers, servers, ane devices ne ek biji sathe connect kare che. Aa network dvaara users duniya na koi pan kone thi information share kari shake, website

browse kari shake, email mokli shake, ane online services no upyog kari shake.

**• Define Network Topologies**

* Network topology etle network ma devices (computers, switches, routers, etc.) kevrite connect karela che, eno structure ke layout. Aa topology thi network no performance, maintenance, ane scalability define thay che.

**• Define list of cables in use of network—Twisted pair , fiber optics**

* 1. Twisted Pair Cable – Copper wires ni pair je twist kari network ma use thay. (Cat5, Cat6)

2. Fiber Optic Cable – Light signals thi fast data transfer kare, high-speed ane long-distance network mate use thay.

Fiber optic best che high-speed ane secure network mate.

**• Straight cable standard sequence 568 A and 568 B**

* 568 A 568 B

G/W O/W

G O

O/W G/W

B B

B/W B/W

O G

BR/W BR/W

BR BR

**• What is fiber optics module and fiber connector**

* Fiber optics module ek hardware device che je fiber optic cable no use kari ne data transmit kare che.

**• Explain Switch**

* Switch ek network device che je multiple devices (computer, printer, servers) ne ek network ma connect karva mate vapratu hoy che. Switch data packet ne receive kare che ane jenathi connected device (destination) taraf forward kare che.

**• Explain Router**

* Router ek network device che je alag alag networks (LAN, WAN, Internet) ne connect kare che ane data packets ne sachi destination sudhi pahochade che. Router primarily ip address par kam kare che ane data ne ek network mathi bija network ma forward kare che.

**• Explain MODEM**

* Modem (Modulator-Demodulator) ek network device che. Je analog signal ne digital signal ma convert kare che. Aa device internet service provide (ISP) mathi aapela signal ne samji ne computer ya network ma forward kare che.

**• Explain DHCP Dynamic host configuration protocol Explain Domain Naming Services What is protocol?**

* Protocol ek lenguage jeno use 2 ke 2 thi vadhre device vachche communication karva mate thay che.
* DHCP (Dynamic Host Configuration Protocol)

DHCP ek network protocol che je decices ne automatic ip address, subnet mask, gateway ane DNS server assing kare che.

* DNS (Domain Name System)

DNS ek system che je domain name ne ip ma convert kare che.

**• What is unicast multicast and broadcast?**

* Unicast :- Ek sender receiver ne data mokle (1 To 1)
* Multicast :- Ek sender multiple receiver ne data mokle (1 To Group)
* Broadcast :- Ek sender badha devices ne data mokle (1 To All)

**• What is OSI model?**

* OSI (Open System Interconnection) ek 7-layer model che je network communication explain kare che.

1:- Physical – Cables, Signals

2:- Data link – MAC address, Switches

3:- Network – IP address, routers

4:- Transport – TCP/UDP

5:- Session – Communication sessions

6:- Presentaison – Data encryption, compression

7:- Application – User application

**• What is port number?**

* Port number ek unique identifier che je network communication ma specific service identify kare che.

Ex:-

- HTTP – 80

- HTTPS – 443

- FTP – 21

- DNS – 53

**• Difference between TCP V/S UDP communications What is session development?**

* -TCP (Transmission Control Protocol) – Reliable, connection-orinted, error cheking

-UDP (User Datagram Protocol) – Fast, communicationless, less reliable

-Session Development – cinnection setup ane termination process.

**• What is flow control?**

* Sender na data ne reciver na and point sudhi data nu speed ne mentain rakhe che .

**• What is the difference between TCP IP model and OSI model?**

* OSI – 7 layers (Theary-based)
* TCP/IP – 4 layers (prectical implemantation)
* OSI ma transport layer alag che TCP/IP ma application ane transport merge thay.

**• What is arp broadcast?**

* ARP (Address Risolution Protocol) -network ma mac address ne ip address ma convert kare che.

**• What is mac-address?**

* MAC (Media Access Control) address ek unique identify che. Je network card (NIC) ne assing thay.

-Ex:- 40-8D-5C-41-FA-4E (48 BIT)

**• What is ip address? Difference between ipv4 address and ipv6 address Assign multiple IPv4 in single network adapter in pc what are network vulnerabilities?**

* IP address ek unique number che. Je network ma ek devicene identify karva mate use thay che.
* Difference between IPv4 and IPv6 addre
* IPv4 : 32 bit address, 4 octel
* Ex :- 192.168.1.1
* IPv6 : 128 bit address, 8 groups
* Ex :- fe80:65e4:b2fb:0:0:0:2doo:47f7
* Assign multiple IPv4 in single network adapter in pc
* Network and shrering center
* Adapter settings
* Right click adapter
* Properties
* Select internet protocol version 4 (TCP/IPv4)
* Advance
* IP setting
* Add multiple IP address
* What are network vulnerabilities
* Weak passwords
* Unpatched software
* Phishing attacks
* Unsecured WI-FI
* Malware & Viruses

**• What is a firewall to use for?**

* Firewall ek security system che je network traffic filter kare che ane unauthorized access ne rokva mate vapray che.

**• Wireless router configure for internet connection and wireless security what is wireless access point? And what is wireless extender?**

- Router ma login karo (192.168.1.1 or 192.168.0.1)

- Internet settings configure karo

- Wireless security ma WPA3 ya WPA2 set karo

- Strong password rakho

- MAC filtering enable karo

* Wireless Access Point (WAP) ek device che, je wired network ne wireless network ma convert kare che.
* Wireless extender ek device che, je Wi-Fi signal ne extend kare che, jethi network range vadhare cover thai shake.