NETWORKING

Q1. What are the two types of transmission technology available?
Ans. The two types of transmission technology are – broadcast and point-to-point.

Q2. What is a 'subnet'?
Ans. A 'subnet' is a generic term for a section of an extensive network, usually separated by a bridge or a router.

Q3. What is DNS?
Ans. The Domain Name System (DNS) is a central part of the internet, providing a way to match names (a website you're seeking) to numbers (the address for the website). Anything connected to the internet – laptops, tablets, mobile phones, and websites – has an Internet Protocol (IP) address made up of numbers.

Q4. Explain 'hidden shares' .
Ans. A hidden or administrative share is a network share that is not visible when viewing another computer's shares.

Q5. How many layers are there in the OSI model? Name them
Ans. There are seven layers – physical, data link, network, transport, session, presentation, and application.

Q6. What is a 'client' and 'server' in a network?
Ans. Clients and servers are separate logical entities that work together over a network to accomplish a task.

Q7. What are the different ways to exchange data?
Ans. Following are the different ways to exchange data:

- Simplex
- Half-duplex
- Full-duplex

Q8. What is a 'frame relay' and in which layer does it operate?
Ans. A frame relay is a packet-switching technology. It operates in the data link layer.

Q9. What is a MAC address?
Ans. A MAC (Media Access Control) address is the 48-bit hardware address of a LAN card and is usually stored in the ROM of the network adapter card and is unique.

Q10. What are the perquisites to configure a server?
Ans. Perquisites to configure a server are:

- LAN card should be connected
- Root (partition on which window is installed) should be in NTFS format
- A server should be configured with a static IP address

Q11. What is ‘beaconing’?
Ans. Beaconing is the process that allows a network to self-repair network problems.

Q12. Differentiate between ‘attenuation’, ‘distortion’, and ‘noise’.
Ans. When a signal travels through a medium, it loses some of its energy due to the resistance of the medium. This loss of energy is called attenuation.
When a signal travels through a medium from one point to another, it may change the form or shape of the signal. This is known as distortion.
Noise is unwanted electrical or electromagnetic energy that degrades the quality of signals and data.

Q13. What is an IP address?
Ans. An Internet Protocol address (IP address) is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication.

Q14. Differentiate between a ‘bit rate’ and ‘baud rate’.
Ans. A bit rate is the number of bits transmitted during one second, whereas, baud rate refers to the number of signal units per second that are required to represent those bits.

Baud rate = bit rate / N, where N is the no. of bits represented by each signal shift.

Q15. What is ‘bandwidth’?
Ans. The limited range of frequency of signals that a line can carry is called the bandwidth.

Q16. What is Project 802?
Ans. It is a project started by IEEE to set standards to enable intercommunication between equipment from a variety of manufacturers.

Q17. What is ICMP?
Ans. ICMP (Internet Control Message Protocol) is a network layer protocol of the TCP/IP suite used by hosts and gateways to send notification of datagram problems back to the sender.

Q18. What are the major types of networks?
Ans. Following are the major types of networks:

- Server-based network
- Peer-to-peer network

Q19. What are the important topologies for networks?
Ans. There are three essential topologies – Star, Bus, and Ring.

Q20. Differentiate between static IP addressing and dynamic IP addressing.
Ans. In static IP addressing, a computer (or another device) is always configured to use the same IP address, whereas in dynamic IP addressing, the IP address can change periodically and is managed by a centralised network service.

Q21. What is a LAN?
Ans. LAN stands for Local Area Network and it refers to the connection between computers and other network devices, located in proximity to each other.

Q22. What are routers?
Ans. Routers connect two or more network segments. These intelligent network devices store information in its routing table such as paths, hops, and bottlenecks. They determine the most accurate data transfer paths and operate in Open Systems Interconnection (OSI) Network Layer.

Q23. What is data encapsulation?
Ans. Data encapsulation is the process of breaking down information into smaller, manageable chunks before their transmission across the network.

Q24. What is a VPN?
Ans. VPN stands for Virtual Private Network. This is a connection method for adding security and privacy to private and public networks, such as Wi-Fi Hotspots and the Internet. VPNs help in establishing a secure dial-up connection to a remote server.

Q25. How can you secure a computer network?
Ans. There are several ways to achieve this.

- Install a reliable and updated antivirus program across the network
- Ensure firewalls are setup and configured properly
- Monitor firewall performance
- User authentication
- Update passwords regularly, every quarter
- Create a virtual private network (VPN)

Q26. What are proxy servers and how do they protect computer networks?
Ans. Proxy servers prevent external users from identifying the IP addresses of an internal network. They make a network virtually invisible to external users, who cannot identify the physical location of a network without knowledge of the correct IP address.

Q27. What are Nodes and Links?
Ans. Nodes – Devices or data points on a larger network are known as nodes. They are individual parts of a larger data structure and contain data. They also link other nodes.

Links- A link is the physical and logical network component for interconnecting hosts or nodes in a network. It is a physical communication medium such as coaxial cable or optical fibre.

Q28. What is SLIP?

Ans. SLIP or Serial Line Interface Protocol was developed during the early UNIX days and it is used for remote access.

Q29. What is TCP/IP?
Ans. TCP/IP is the short form of the Transmission Control Protocol / Internet Protocol. It is a set of protocol layers designed to facilitate data exchange on heterogeneous networks.

Q30. What common software problems lead to network defects?
Ans. It can be any or a combination of –

- Application conflicts
- Client-server problems
- Configuration error
- Protocol mismatch
- Security issues
- User policy & rights issues

Q31. What is a client/server network?
Ans. In a client/server network, one or more computers act as servers. Servers offer a centralized repository of resources such as printers and files. The client refers to a workstation that has access to the server.

Q32. Describe networking.
Ans. Networking facilitates data communication between computers and peripherals, and it is done through wired cabling or wireless links.

Q33. Why is encryption on a network necessary?
Ans. Encryption is the process of changing data from its original readable format to an unreadable format, thus ensuring network security. It requires the user to use a secret key or password to decrypt the data.

Q34. What are the types of errors?
Ans. There are two categories of errors –

- Single-bit error – one-bit error per data unit
- Burst error – Two or more bits errors per data unit

Q35. What is a client-server model?
Ans. The client-server model is a distributed communication framework for network processes. This framework is distributed among service requestors, clients and service providers.

Q36. What is TELNET?
Ans. TELNET is a client-service protocol on the internet or local area network, allowing a user to log on to a remote device and have access to it. Technically, it is a bidirectional interactive text-oriented communication facility, which uses a virtual terminal connection.

Q37.What is RIP?

Ans. It is the abbreviation for Routing Information Protocol. It is a simple protocol that exchanges information between the routers.

Q38.What is half-duplex?
Ans. It is the mode of communication between two devices. Here the data flows bi-directionally but simultaneously. A perfect example of a half-duplex is a walkie-talkie.

Q39.What is full-duplex?
Ans. This is also a mode of communication between two devices and the data flow is bi-directional too, but the flow is simultaneous. Example – telephone.

Q40.What is netstat?
Ans. It is a command-line utility program that provides information about the current Transmission Control Protocol /Internet Protocol (TCP/IP) settings of a connection.

Q41.What is a peer-peer process?
Ans. The processes on each machine that communicate at a given layer are called the peer-peer process.

Q42.What is anonymous FTP?
Ans. With the help of an anonymous FTP, users can be granted access to files in public servers. Users can log in as anonymous guests, thus the name.

Q43.Can you explain NAT?
Ans. It stands for Network Address Translation and is a protocol that allows a network device, usually a firewall, to assign a public address to a computer/s inside a private network.

Q44.Can you tell me the main elements of a protocol?
Ans. This is among the very commonly asked networking interview questions. Your reply should be –

There are three main elements of a protocol –

1. Syntax: It refers to the structure or format of the data and their order of presentation.
2. Semantics: It specifies the meaning of each section of bits.
3. Timing: Timing refers to two characteristics, which include the timing of data sending and the speed of data sending.

Q45.What is NIC?
Ans. NIC is the abbreviation for Network Interface Card. It is a peripheral card with electronic circuitry. It is attached to a PC and connects it to a network. NIC has its own MAC address and this identifies a PC on the network.

Q46.What is the difference between Communication and Transmission?
Ans. Transmission – A process of sending and receiving data between source and destination, in only one way. It is regarded as the physical movement of data.

Communication – A process of sending and receiving data between source and destination, in both ways.

Q47.How many layers does TCP/IP have?
Ans. TCP/IP has four layers –

- Network Layer
- Internet Layer
- Transport Layer
- Application Layer

Q48.Explain NOS.
Ans. Short form for Network Operating System. Specialized software that provides connectivity to a computer such that it can communicate with other computers and devices on a network.

Q49.What is IDEA?
Ans. IDEA is the abbreviation for International Data Encryption Algorithm. It is the replacement for the Data Encryption Standard (DES).

Q50.What is ASCII?
Ans. American Standard Code for Information Interchange.

Q51.What is Brouter?
Ans. Brouter is a device that functions as both a bridge and a router. It forwards data within the networks and also routes data to individual systems in a network.

Q52.How would you differentiate between Firewall and Antivirus?
Ans. Both are security applications used in networking.

A firewall prevents unauthorized access in private networks as intranets. However, it does not protect against virus, spyware, or adware.

An antivirus is a software that protects a computer from any malicious software, virus, spyware, or adware.

Q53.How will you recover data from a Virus-infected system?
Ans. We will install an OS and updated antivirus in a system that is free of any viruses, and then connect the hard drive of the infected system as a secondary drive. The hard drive will then be scanned and cleaned. Data can now be copied into the system.

Q 54. What is ipconfig?
Ans. An acronym for Internet Protocol Configuration, Ipconfig is used on Microsoft Windows to view and configure the network interface. It displays all TCP/IP network summary

information available on a network and helps to modify the DHCP protocol and DNS settings.

Q 55. What is ifconfig?
Ans. It is an acronym for Interface Configuration and is used on Linux, Mac, and UNIX operating systems. ifconfig configures and controls the TCP/IP network interface parameters from Command Line Interface while allowing the user to check the IP addresses of these network interfaces.

Q 56. What is the semantic gap?
Ans. A semantic gap is a difference between high-level programming sets in various computer languages and the simple computing instructions used by microprocessors.

Q 57. What is the difference between a Domain and a Workgroup?
Ans. The main difference is where do the computer networks belong to. If it is a home network, then computers will be a part of a workgroup, and if it's a workplace network, then the computers will be a part of a domain.

Q 58. What Is NVT?
Ans. NVT stands for Network Virtual Terminal and is a representation of a primary terminal. It is used at the start of a Telnet session.

Q 59. What Is BGP?
Ans. BGP or Border Gateway Protocol is a protocol used to transfer data and information between different host gateways or autonomous systems.

Q 60. What is Round Trip Time?
Ans. Round Trip Time or RTT is the time taken to send a message from one end of a network to the other and back.

Q 61. What is 127.0.0.1 and localhost?
Ans. Localhost is the standard hostname given to the machine, and it is represented by the IP address 127.0.0.1. Therefore, we can say that 127.0.0.1 and localhost are the same thing.

Q 62. Which are the most typical functional units of the client/server applications?
Ans. The most typical functional units of the client/server applications are –

- Presentation logic or user interface (e.g., ATMs)
- Business logic (e.g., Account balance enquiry)
- Data (e.g., Bank account records)

Q 63. What are the Triggers?

Ans. Triggers are event-driven specialized procedures and are managed by database management systems. It is capable of performing complex actions and use the procedural languages full throttle.

Q 64. What is a Gateway?
Ans. Gateway is a hardware device that is connected to two or more networks. It may be a router, firewall, server, or any other similar device, and is capable of regulating traffic in the network.

Q 65. Is there a difference between a gateway and a router?
Ans. A gateway sends the data between two dissimilar networks, while a router sends the data between two similar networks.

Q 66. Explain 10Base-T.
Ans. 10Base-T specifies data transfer rate, i.e., 10Mbps. Here the usage of the term 'Base' defines 'Baseband' and not 'Broadband'. T denotes the type of cable, which is a twisted pair.

Q 67. Name the user support layers.
Ans. There are three types of user support layers –

- Session Layer
- Presentation Layer and
- Application Layer

Q 68. What is Piggy Backing?
Ans. It is the process of gaining access to a restricted communications channel by using an already established session by another user. This technique is known to improve the efficiency of the bidirectional protocols.

Q 69. What is asynchronous transmission?
Ans. It is a serial mode of transmission. It is the process of data transmission, where every character is a self-contained unit. Each character in asynchronous transmission has its start and stop bits, along with an uneven interval between them.

Q 70. What is synchronous transmission?
Ans. Synchronous transmission refers to continuous data streaming in the form of signals, accompanied by regular timing signals. These signals are generated by the external clocking mechanism and ensure that senders and receivers are in synchrony.

Q 71. What are the different types of transmission media?
Ans. Transmission media has two broad types –

- Guided media (wired)
- Unguided media (wireless)

Q 72. What is Process Sigma?

Ans. Process Sigma measures the frequency of a task that is performed without any error. It is expressed as a number of standard deviations on a normal distribution.

Q 73. What is FMEA?
Ans. Failure Mode Effect and Analysis or FMEA is a qualitative and systematic tool to identify potential failure modes in a system, the reasons, and their effects.

Q 74. What is the backbone network?
Ans. It refers to a centralized infrastructure for distributing different routes and data to various networks. Backbone networks connect LANs and WANs.

Q 75. What is OSPF?
Ans. OSPF is an abbreviation for Open Shortest Path First. It is a routing protocol that uses a link-state routing (LSR) algorithm to find out the best possible path for data exchange.

Q 76. Mention what is the range of addresses in the classes of internet addresses?
Ans. Following are the five different ranges of addresses in the classes of the internet:
Class A: 0.0.0.0 – 127.255.255.255
Class B: 128.0.0.0 – 191.255.255.255
Class C: 192.0.0.0 – 223.255.255.255
Class D: 224.0.0.0 – 239.255.255.255
Class E: 240.0.0.0 – 247.255.255.255

Q 77. Explain what the Datalink protocols are?
Ans. Datalink protocols are defined as the sets of requirements used to implement the data link layer. There are the following categories of Data Link protocols:

- Synchronous Protocols
- Asynchronous Protocols
- Bit Oriented protocols
- Character Oriented Protocols

Q 78. Mention the responsibilities of the Network Layer?
Ans. The Network Layer is liable for the source to destination delivery of packets across different networks or links.

- Routing
- Logical Addressing

Q 79. Name the access method used in 1000BaseTX network?
Ans. CSMA/CD access method is used in 1000BaseTX network.

Q 80. Mention the different types of links used to build a computer network?
Ans. Following are the different types of links used to build a computer network:

- Cables
- Wireless Links

- Last-Mile Links
- Leased Lines

Q 81. Mention the types of wires used for data transmission in UTP cable?
Ans. There are four types of wires used for data transmission in UTP cable, which are wire 1, 2, 3, and 6. Where wires 1 and 2 are used to transmit the data while wires 3 and 6 are used to receive the data.

Q 82. Can we use RG59 and RG6 cables in a computer network?
Ans. RG59 and RG6 cables are not used in the computer network. These cables are made for the cable TV network.

Q 83. Describe what 10Base2 stands for?
Ans. In networking, 10Base2 architecture is divided in three-strand where 10 stands for speed, Base stands for Baseband transmission, and 2 stands for 200 meters.

Q 84. Name the cable used in the 10BaseFL network?
Ans. Fiber optical cable is the cable used in the 10BaseFL network.

Q 85. Why is IP protocol deliberated as a connectionless protocol?
Ans. An IP protocol is deliberated as a connectionless protocol because it does not build up a connection before sending data to the endpoint.

Q 86. How many can network segments be populated in 10Base2?
Ans. The maximum three network segments can be populated in 10Base2.

Q 87. Explain what the point-to-point protocol is?
Ans. A communications protocol is used to connect computers to remote networking services, including Internet service providers.

Q 88. Mention what NIC stands for?
Ans. The NIC stands for the network interface controller.

Q 89. Mention any five applications which use TCP port.
Ans. Following are the five application which uses TCP port:

- FTP
- POP
- SSH
- SMTP
- Telnet

Q 90. Explain what the 5-4-3 rule is? Mention in which architecture it is used?
Ans. In 5-4-3 rule, there are a maximum of five segments in a network that are connected with four repeaters. It is used in 10Base2 and 10Base5 Ethernet architectures. In this rule, only three segments can be populated with nodes.