SHORT QUESTIONS

Q.1   What are the technologies involved in information networks?

Ans. Information networks or computer networks are the convergence of two technologies, Computing and Telecommunication. This convergence resulted in LAN (Local area Network), MAN (Metropolitan Area Network), WAN (Wide Area Network) and the Internet. The most popular information networks are the Internet or World Wide Web. Internet is a large network through which information continuously flows.

Q.2   Define a Network?

Ans. The interconnection of computer systems and/or peripheral devices with transmission medium and data communication devices to share data and resources is called networks or a distributed data processing system in which multiple computers are linked together for the purpose of data communication and resource sharing.

Q.3   What are uses of networks?

Ans. Networks allow users to share programs and data simultaneously. Networks allow users to share peripheral devices. Networks allow users to send email messages along with attachments (files). Some networks also provide tools for teleconferencing and videoconferencing.

Q.4   What are types of Networks?

Ans. LAN (Local area Network)

MAN (Metropolitan Area Network)

WAN (Wide Area Network)

Q.5   What is LAN?

Ans. LAN is Local area Network. It is a digital communication system capable of interconnecting a large number of computers, terminals and peripheral devices within a limited geographical area. It spans a small geographical area such as an office or a group of buildings e.g. College Lab etc. Its speed is faster than WAN.

Q.6   What is MAN?

Ans. MAN stands for Metropolitan Area Network. A MAN connects an area larger than LAN but less than WAN, such as a city with dedicated or high-performance

hardware e.g. Mobile phones etc. The purpose of MAN is to bypass the local telephone companies when accessing long distance services.

Q.7   What is WAN?

Ans. WAN is a Wide Area Network. It is a digital communication system, which interconnects different sites, terminals and also enables different LANs to communicate each other. It spans a large geographical area such as among cities, countries or continents e.g. Internet. It is also known as long-haul network.

Q.8   What is an Internet?

Ans. Internet is a network of connected computers that provides us a facility of exchange data, messages and files with other computers that are connected to the Internet. Due to invention of Internet the Globe is referred as "Global Village". And Internet is an ocean of knowledge.

Q.9   What are uses of Internet?

Ans. WWW, E-mail, telnet, File-Transfer Facility, Gopher, Chat groups, Intranet, Extranet

Q.10   What is WWW?

Ans. It stands for World Wide Web. It is a collection of millions of uploaded web pages or web sites. It organizes the Internet related resources so that we can easily access the information available to the Internet. Hyper text transfer protocol (http) protocol is used for WWW.

Q.11   What is E-mail?

Ans. It is a process of sending and receiving messages and files among the Internet users.

Q.12   What is Telnet?

Ans. It is a software protocol that allows one computer to connect to another computer and make use of the other computer's information.

Q.13   What is File-Transfer Facility of Internet?

Ans. File Transfer Protocol (ftp) is used to transfer files from one computer to another. The process of transferring files from remote computers to our computer is called downloading. The process of transferring files from our computer to remote computer is called uploading.

Q.14   What is Gopher?

Ans. It is an access and retrieval system covering a wide range of information, from reference materials, to magazine articles, to government documents and speeches.

Q.15 What are Chat Groups?

Ans. The Internet users with similar interests form up their forums to have online real-time discussions over Internet.

Q.16 What is an Intranet?

Ans. It is a privately owned secure, business network based on internet technology (using TCP/IP) not necessarily connected to the internet. Information is available to all employees, no matter where they were or what kind of hardware they were using. Information cannot be exchanged outside the organization-using intranet.

Q.17 What is an Extranet?

Ans. It is a combination of multiple intranets. Intranets of different companies are connected to each other to share data and information. Each company on extranet provides selected information to one or more other companies.

Q.18 What is downloading?

Ans. The process of transferring files from remote computers to our computer is called downloading.

Q.19 What is uploading?

Ans. The process of transferring files from our computer to remote computer is called uploading.

Q.20 Define Workgroup Computing.

Ans. It is also known as collaborative computing. It enables the individuals and teams of certain projects to use computer networks for the purpose of cooperation, consultation and information sharing. It permits the individuals to collaborate with their colleagues to work on the company information over the network. At the same time they can also link to other important contacts outside their organization.

Q.21 Define groupware.

Ans. A technique to share information in which many users or researchers can work on their projects by sharing the same domain of information online is called groupware. Groupware is software used for workgroup computing.

Q.22 Define Client-Server Model/Dedicated Server Model.

Ans. In this type of network model, one or more computers are dedicated servers and the remaining computers work as clients. The server cannot play the role of the client and vice-versa. Server is a computer that controls the network. It has the disks, containing database files and shared devices like printer, which can be used by other computers or nodes. The clients are all other computers on the network.

Q.23 What are the advantages Client-Server Model?

Ans. It reduces the network traffic. The response of each node on client server network is very fast. In client server network terminals or clients are less expensive because mostly work is done by the server machine.

Q.24 Define Peer-to-Peer Network Model?

Ans. In this network modal, every computer plays a role of server or client depending on the nature of communication. There is no clear distinction between the server and client machines. All computers have equal status. No one has the control over the others. Each computer is independent in terms of data storage and devices. The users can share data and resources when required.

Q.25 What is a Hybrid Network Model?

Ans. It has the combined features of both client-server and peer-to-peer networks. The users take advantage of both modals.

Q.26 What are Network Standards?

Ans. The standards are the precise documents containing technical and physical specifications about the network being designed. Those standards are taken into considerations, which are worldwide, acceptable. De-Facto Standard and De-Jure Standard are the types of network standards.

Q.27 What areDe-Facto Standard?

Ans. De-Facto means "by tradition" or "by facts". These standards are developed informally and came into existence of historical development. These standards are used by organizations worldwide.

Q.28 What are De-Jure Standard?

Ans. De-Jure means "According to Law or Regulation". These standards are properly researched, developed and approved by some networks governing bodies. These organizations are ANSI, IEEE, ISO, ITU-T, EIA, Telcordia.

Q.29 What is a Network Topology?

Ans. Topology refers to the layout of connected devices on a network or the scheme of joining computers in a network is called topology or arrangement of computer nodes in a computer network is called topology. Bus, Ring, Star, Tree and Mesh are types of topologies.

Q.30 Define a Bus Topology?

Ans. In this topology all the computers are connected in series with a common communication medium. The communication medium is called BUS. A special device terminator is used at both ends of the series to absorb the signals.

Q.31 What is a Ring Topology?

Ans. In a ring network, every device has exactly two neighbors for communication purpose and the last computer is connected to the first computer. All messages travel through a ring in the same direction. A failure in any cable or a device breaks the loop and the entire network fails. Token passing scheme is used in ring topology.

Q.32 **Define Star Topology?**

Ans. All the computers are connected through a central device (Hub or Switch). Twisted pair (UTP) cable is used in star topology. If any computer fails the network is not affected. If the HUB or Switch fails then the entire network also fails.

Q.33 **What is a Tree Topology?**

Ans. Tree topology integrates multiple star topologies together on to a bus i.e. all the computers are connected in such a way that forms a tree like structures. It has the combined features of star and bus topology. Only HUBs are connected directly to the tree bus and function of each hub as the root of tree devices.

Q.34 **Define Mesh Topology.**

Ans. In Mesh topology, every computer is directly connected to every other computer on the network. There are several possible paths from source to destination. Mesh topology is used in WAN.

Q.35 **Define Protocols.**

Ans. Protocols are the rules to exchange data between two devices. These protocols are defined in the network software. Protocols are Ethernet, Token Ring, ARCnet, TCP/IP, ISDN and DSL

Q.36 **What is Ethernet?**

Ans. This protocol is used in bus topology with high-speed network cable. It is relatively simple and cheaper. As the entire computers share the same transmission media therefore the computers must follow certain rules for communication with each other otherwise it may cause a loss of data.

Q.37 **What is CSMA/CD?**

Ans. The access method that allows only one station to transmit at a time on a shared medium is called CSMA/CD (Carrier Sense Multiple Access with Collision Detection).

Q.38 **What is Token Ring?**

Ans. Token ring protocol is used in ring topology. A token is an electronic signal. Only one token is available in ring topology and when a node wants to transmit data, first it captures the token and then transmits the data. After the transmission, it releases the token back to the network. The token ring is associated with IBM (International Business Machines), which worked with the concept of ring network.

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Q.39 **What is token passing?**

Ans. The method of controlling access to the shared network cable is called token passing. Token ring protocol is used in ring topology. A token is an electronic signal and only one token is available in ring topology and when a node wants to transmit data; first it captures the token and then transmits the data. After the transmission, it releases the token back to the network.

Q.40 **What is an ARCnet?**

Ans. It stands for Attached Resource Computer Network. It uses either twisted pair or co-axial cable. The original ARCnet protocol was very slow. ARCnet is inexpensive, reliable, easy to setup and easy to expand. Fast ARCnet increased the transmission rate to 100Mbps and it can also use fiber optic cable.

Q.41 **What is TCP/IP Protocol?**

Ans. It stands for Transmission Control Protocol/Internet Protocol. It is a WAN protocol. Every computer is identified separately over internet using TCP/IP protocol. TCP/IP ensures the reliable connection between the computers over Internet.

Q.42 **What is ISDN?**

Ans. It stands for integrated services digital network. It transmits data voice and video simultaneously at a very high speed over telephone lines. It provides better transmission rate. It provides reliable digital connection at higher speeds than those offered by analog connection.

Q.43 **What is DSL?**

Ans. It stands for digital subscriber line. It provides high-speed digital data transmission over telephone lines. Modems are necessary with DSL technology because lines are analog while data is digital. It is an alternative to ISDN.

Q.44 **Name the Components of a Network.**

Ans. All networks required some components for interconnection. These components are Communication Media, NIC, Repeater, Hub, Bridge, Switch, Gateway, and Router.

Q.45 **What is an NIC?**

Ans. It is a printed circuit board that inserted into expansion slots. Some computers have built-in NIC. It provides a port to connect to the network. It provides network communication capabilities to and from a computer. It is also called LAN adapter.

Q.46 **What is the concept of Repeater?**

Ans. The maximum length for a UTP cable in a network is 100 meters. If you need to extend the network limit, you must add a device. This is called repeater. A

repeater cleans, amplifies and resends the signal that is weakened by a long cable length.

Q.47 What is the function of Hub?

Ans. Hub is used in star topology as central device. It is a multi-port repeater. Hub is used instead of repeater i.e. the purpose of hub is to regenerate and retime the network signals.

Q.48 What is a Bridge?

Ans. It is used to connect similar types of network. It recognizes the message on the network and passes on the address to computer in other networks. It filters the network traffic and divides the network into segments.

Q.49 What is function of Switch?

Ans. It is a multi-port bridge. It is more intelligent device than a hub. Its purpose is to concentrate connectivity.

Q.50 Define Gateway.

Ans. It is a collection of hardware and software resources that enable a computer to communicate with a computer on a different network.

Q.51 What is a Router?

Ans. Router is a combination of hardware and software resources and it connects two or more networks. High-speed routers serve as Internet backbone and handling the excessive data traffic. Its purpose is to examine incoming packets, choose the best path and sends them to the proper outgoing port. It uses the routing protocols, operating system and management software.

Q.52 What is CSMA/CD-Carrier Sense Multiple Access with Collision Detection?

Ans. It is a local area network access method in which contention between two or more stations is resolved by collision or it is an access method that allows only one station to transmit at a time on a shared medium.

Q.53 Define CSMA/CS-Carrier Sense Multiple Access with Carrier Sense.

Ans. A node or a computer listens to the bus for a predetermined amount of time before transmitting and waits until the talking node has completed the transmission.

Q.54 What is CSMA/CR-Carrier Sense Multiple Access with Collision Resolution?

Ans. It allows multiple devices to communicate at once; a protocol determines which device receives priority.

Q.55 What is an OSI Model?

Ans. OSI is Open System Interconnection Model. It is known as OSI networking reference model. It was presented by ISO (International Standard Organization). It provides a logical framework how data communication processes should take

place across networks. There are seven layers in OSI model and each layer has a particular function. These layers are Application Layer, Presentation Layer, Session Layer, Transport Layer, Network Layer, Data Link Layer, Physical Layer

Q.56   What are the groups of OSI layers?

Ans.   There are two groups of OSI layers; upper layers and lower layers. Upper layers focus on user applications and how files are represented on computers before transmission. Lower layers concentrates on how communication occurs across the network.

Q.57   What is a function of Application Layer?

Ans.   It provides network services to user application. It is responsible for exchanging information between programs running on the computer.

Q.58   What is a function of Presentation Layer?

Ans.   It is concerned with how data is converted and formatted for data transfer. This layer performs code conversion, data translation, compression and encryption.

Q.59   What is a function of Session Layer?

Ans.   It determines how two devices establish, maintain and manage connection. It determines how two devices talk to each other. These connections are called sessions.

Q.60   What is a function of Transport Layer?

Ans.   It is responsible for breaking the data into segments. It establishes a logical connection between two devices and provides error handling. It also controls the message flow between the systems.

Q.61   What is a function of Network Layer?

Ans.   It is responsible for determining the address on the network. It will determine the route from source to destination. It will manage the network traffic. Segments at this level are converted into packets.

Q.62   What is a function of Data Link Layer?

Ans.   It is responsible for the reliability of the physical connection established at physical layer. It provides an error free transmission of data from one computer to another. Packets are converted into frames at this level.

Q.63   What is a function of Physical Layer?

Ans.   It determines how data is converted into bits. It defines the physical characteristics of the network such as connections, voltage levels, timing and physical medium. It deals with the physical transmission of bits over transmission medium. It is responsible for activating and maintaining the physical link between systems.