Computer Networks

Que.1. http://www.dhsekerala.gov.in/home.html IS THE OFFICIAL WEB SITE ADDRESS OF HIGHER SECONDARY EDUCATION.IDENTIFY THE PART OF THE ABOVE URL

[Marks :(2)]

Ans. PROTOCOL,PRIMARY DOMAIN,SECONDARY DOMAIN,FILENAME

Que.2. WHAT IS TOPOLOGY? EXPLAIN FOUR TOPOLOGIES?

[Marks :(5)]

Ans. Topology: The way in which the nodes are physically interconnected to form a network.

Bus Topology: All the devices/nodes are connected sequentially to the same backbone or transmission line. This is a simple, low-cost topology, but its single point of failure presents a risk.

Star Topology: All the nodes in the network are connected to a central device like a hub or switch via cables. Failure of individual nodes or cables does not necessarily create downtime in the network but the failure of a central device can. This topology is the most preferred and popular model.

Ring Topology: All network devices are connected sequentially to a backbone as in bus topology except that the backbone ends at the starting node, forming a ring. Ring topology shares many of bus topology's disadvantages so its use is limited to networks that demand high throughput.

Tree Topology: A root node is connected to two or more sub-level nodes, which themselves are connected hierarchically to sub-level nodes. Physically, the tree topology is similar to bus and star topologies; the network backbone may have a bus topology, while the low-level nodes connect using star topology.

Mesh Topology: The topology in each node is directly connected to some or all the other nodes present in the network. This redundancy makes the network highly fault tolerant but the escalated costs may limit this topology to highly critical networks.

Que.3. WHAT IS COMPUTER NETWORK?EXPLAIN ANY FOUR ADVANTAGES OF COMPUTER NETWORK

[Marks :(2)]

Ans. Computer network is a group of computers and other computing hardware devices. Advantages: Resource sharing, Price-performance ratio, Communication, Reliability, Scalability.

Que.4. EXPLAIN ANY FIVE DATACOMMUNICATION DEVICES

[Marks :(5)]

Ans. A device used in a wired network to connect computers/devices of the same network. Switch: An intelligent device that connects several computers to form a network.

Repeater: A device that regenerates incoming electrical, wireless or optical signals through a communication medium
Bridge: A device used to split a network into different segments and interconnected.
Router: A device that can interconnect two networks of the same type using the same protocol. It is more intelligent than bridge.
Gateway: A device that interconnects two different networks having different protocols.

Que.5. WHAT IS NETWORK PROTOCOL?EXPLAIN ANY THREE.?

[Marks :(3)]

Ans. Protocol: The set of rules to be followed in a network for data transmission. TCP/IP, SPx/IPx are examples. HTTP, FTP and DNS are three sub protocols of TCP/IP protocol suite.
HTTP stands for Hypertext Transfer Protocol. It is a standard protocol for transferring requests from client-side and to receive responses from the server-side.
FTP stands for File Transfer Protocol. It is a standard for exchanging of data and program files across a network.

Que.6. Compare any three types of networks based on span of geographical area.

[Marks :(2)]

Ans. Types of network: PAN (Personal Area Network), LAN (Local Area Network), MAN (Metropolitan Area Network) and WAN (Wide Area Network).

Que.7. Write notes on the following:
a) IP address
b) MAC address
c) Modem

[Marks :(3)]

Ans. Media Access Control (MAC) address: A universally unique address (12 digit hexadecimal number) assigned to each NIC (Network Interface Card) by its manufacturer.
IP address: A unique 4/6 part numeric address assigned to each node on a network, for their unique identification.\Modem: It converts digital signals to analog signals and converts the analog signals back to
digital signals.
Modem: It converts digital signals to analog signals and converts the analog signals back to digital signals.

Que.8. Any device which is directly connected to a network is generally known as _____.

[Marks :(1)]

Ans. NODE

Que.9. In ..... topology all the nodes are connected to a main cable.

[Marks :(1)]

Ans. BUS TOPOLOGY

Que.10. Bluetooth can be used for ..... communication.

[Marks :(1)]

Ans. SHORT DISTANCE

Que.11. Explain the advantages of forming networked computers than keeping them stand- alone computers.

[Marks :(2)]

Ans. Advantages: Resource sharing, Price-performance ratio, Communication, Reliability, Scalability

Que.12. Internet is an example of _____.

[Marks :(1)]

Ans. WAN

Que.13. What is mean by bandwidth, noise and node?

[Marks :(3)]

Ans. a). Bandwidth: it is the amount of data transfer through a communication medium in a unit time.

b). Noise: It is the unwanted electrical or electromagnetic signal that lowers the quality of the data signals.

c). Node: Any device that is directly connected to a computer network is called a node

Que.14. What is mean by data communication?

[Marks :(1)]

Ans. Data communication is the exchange of digital data between any two devices through a transmission medium

Que.15. What are the basic elements of a data communication system?

[Marks :(3)]

Ans. 1) Message : It is the information to be communicated like text, picture etc.
2) Sender (transmitter or source) : The device used for sending data
3) Receiver : The device that receives the message
4) Medium :It is the path through which message travels from sender to receive.
5) Protocol : The rules under which transmission takes place between sender and receiver.

Que.16. What are different types of computer networks?

[Marks :(5)]

Ans. 1)Personal Area Network(PAN): Network of communication devices in the proximity of an individual.
Eg. Bluetooth communication.
2) Local Area Network(LAN): Networking of communication devices within a limited area like a building , room or a campus. It can setup using wired media(UTP/STP cable) or wireless media(

infrared, radio waves etc) and can
cover up to a few kilometers.
3) Metropolitan Area Network(MAN): It is a networking of communication devices within a city. Its coverage may up to a few hundred kilometers. It can interconnects a number of LANs and computers.
4) Wide area Network(WAN): It can span a geographically wide area like 1000 or more kilometers and may include many small networks. It may use transmission media like microwave.
The largest WAN in the world is internet.

Que.17. Explain the logical classification of networks?

[Marks :(2)]

Ans. 1) Peer to Peer: Here there is no dedicated server system. Any computer in the network can act as Server or Client at any instance.
2) client Server: Here a high end computer (Server) provides specific services to the client upon client request

Que.18. What are the different types of servers?

[Marks :(2)]

Ans. 1) File Server: Computers stores and manages files for the users in the network
2) Print Server: Redirect print jobs from client to specific printers
3) Web server: Dedicated to responds the requests for web pages.
4) Data Base Server: Allows authorized clients to view , modify and/ or delete data in a common database

Que.19. What is MAC address? What is its importance?

[Marks :(3)]

Ans. Media access control Address is universal, unique and permanent address (12 digit hexadecimal number) assigned to each NIC by its manufacturer. Its first half contains the ID of the manufacturer and second half is the serial
number of the particular adapter. MM:MM:MM:SS:SS:SS

Que.20. In communication system the term source refers to .....

[Marks :(1)]

Ans. SENDER

Que.21. A ... ... is a computer peripheral that allow you to connect and communicate with other computer via telephone lines.

[Marks :(1)]

Ans. MODEM

Que.22. What is the importance of TCP / IP protocol in computer networks?

[Marks :(3)]

Ans. Transfer Control Protocol/Internet Protocol used to interconnect network devices on local network and internet. When data is send from one device to another, the data is broken in to small packets by TCP and send through transmission medium. Delivery of each of these packets to the right destination is done by IP. When the packets are received by the receiving computer, TCP checks packets for error and assemble in to original message