Assignment :- 2

Chapter :- Data Communication

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Q1 What are the different types of Networks?

Ans A computer network is a system in which multiple computer are connected to share information and resources computer network varies with each other. based on their functionally, geography, ownership & communication media used.

A computer network can be divided into the followings types, based on the geographical area that they cover :— They are—

1. LAN :— Local Area Network
2. MAN :— Metropolitan Area Network
3. WAN :— Wide Area Network.

1. LAN : (Local Area Network) :— A local area network is a network, which is designed to operate over a very small geographical or physical are such as an office, building, a group of building, etc. Generally, it is used to connect two or more personal computers through a communication medium such as, twisted pair of cables, etc.

2. MAN : (Metropolitan Area Network) :— A melropolitan area network is a version of LAN that uses similar Technology as LAN. I spans over a large geographical area such as a town or an entire city.

3. WAN : (Wide Area Networks) :— A wide area network (also known as VAN) is a large network of information that is no tied to a single location. WAN

can facilitate much more b/w devices around the world through a WAN provider.

Q2 Explain is the (difference) shielded Twisted pair (STP) & ~~Unshielded~~ (unshielded twisted pair (UTP).

	UTP	STP
1.	It is an unshielded twisted pair.	It is a shielded twisted pair.
2.	UTP cable is a twisted pair cable with wires are twisted together.	It is en-closed within a foil or mesh shield.
3.	The Price of UTP is lower as compare to the STP.	The price of STP is much costlier than UTP.
4.	It does not require a grounding cable.	It requires a grounding cable
5.	UTP has high crosstalk	STP has low crosstalk
6.	Transfering speed of the data signal is slow as compared to the STP.	Transfering speed of the data signal is high as compare to the UTP.

3 what is the difference between baseband transmission and broadband Tranimission?

Ans

	Baseband Transmission	Broad-band Transmission
1.	In baseband transmission the type of signalling used is digital.	In broadband transmission by the type of signalling used is analog.
2.	It is bidirectional in nature.	It is undirectional in nature.
3.	Signals can only travel over short distance.	Signals can be travelled over long distance.
4.	It works well with topology.	It is used with a bus as well as tree topology.
5.	This Transmission is cheaper to design.	This transmission is expensive to design.

Q4 What is difference between a hub, Modem router and a switch

Ans

	Router	Switch	Modem	hub
1.	The main objective of router is to connect various simultaneously	while the main objective of switch is to connect various devices simultaneously.	A modem converts digital data into analog digital signals that can be transmitted over wires.	Hubs are networking devices that connects several devices in a network.
2.	It works in network layer	while it works is data link layer.	A modem connects a computer or other instrument to the internet.	A hub can be used to link a network of P.C.

3.	Router is used by LAN as well as MAN.	while switch is used by only MAN.	The transmission mode for a modem is full duplex.	The transmission mode for a hub is half duplex.
4.	There is less collision take place in router.	while there is no collision take place in full duplex.	The maximum speed of modem is 56.6 kbps	The maximum speed of a hub is 10 Mbps.

5. When you move the PC to another PC, NIC cards does the MAC adress get transferred as well.

Yes, that's because MAC adresses are hard-wired into the NIC circuitry, not the PC. This also means that a PC can have a different MAC adress, when the NIC card was replaced by another one.

When trouble shooting computer network problems, what command hard-ware-related problems can occur.

A large percentage of a network is made up of hard-ware. Problem in these areas can range from malfunctioning hard-drives, broken NICs & even hard-ware startups.

Q7 In a network that contains two serves & twenty workstation, where is the best place to install an Anti-virus program.

Ans A good fire-wall, this can stop instructions, malware authorized excess access etc, before they reach the workstation. Antivirus software on the serves & at the endpoint workstation. This software should be centrally managed to keep & users update constantly & to minimize users meddling with the settings. Good antivirus will also protect email clients. Educated & aware users who do not casually, install downloaded programms; don't click on unknown links. Don't fall for phishing emails, etc. Establish a strong password policy for all users. You should consider not giving your users administrate rights on their accounts. They will complain that they cannot install what they need & your work-load will increase but i gruarantee & secure.

Q8 Define static IP & Dynamic IP, Discuss the difference b/w IPV & IPV6.

Ans Static IP:→ A computer on the internet can have a static IP address, which means it stays the same over time.
Dynamic IP:→ address which means the address can change over time.

IPV 4	IPV 6
• IPV4 has a 32 bit address length	IPV6 has a 128-bit address length.
• It supports Mannual & DHCP address configuration.	It supports auto and renumbering address configuration.
• In IPV4 end to end, connection integrity is Unachievable.	In IPV6 end to end connection integrity is achievable.
• IPV4 has a header of 20-60 bytes	IPV6 has header of 40 bytes fixed.

Q9 Discuss TCP/IP model in detail.

TCP/IP reference model is a four-layered suite of communication protocols. It was developed by the DOD (Department of Defence) in 1960s. It is named after the two main protocols that are used in the model namely, TCP & IP. TCP stand for Transmission code control. Protocol & IP stands for internet Protocal. The four layers in the TCP/IP protocal suite are :-

1. Host-to-Network layer :- It is the lowest layer that is concerned with the physical Tranimission of data. TCP/IP does not specifically define any protocol, here but supports all the standard protocols.
2. Internet layer :- It defines the protocol for logical Transmission of data over the network.

3. Transport layer :→ It is responsible for error-free to end to end delivery of data.
4. Application layer :→ This is the topmost layer and defines the interface of host programs with the transport layer services.

Application layer	Telnet	DNS	HTP
Transport layer	TCP	UDP	SCTP
Internet layer	IP	ICMP IGMP	RARP ARP
Host-To-network layer	Ethernet	Frame Relay	Tokan Ring	ATM

Q10 What is web browser? Give example of browser?

Ans A web browser take you anywhere on the internet. It retrives information from other parts of the web & displays it on your desktop or mobile devices. The information is Transferred using the Hypertext Transfer Protocol, which defines how text, images & video are transmitted on the web. examples :- Google, Yahoo, MSN, Lynx, etc.

Q11 What is a search engine. Give examples.

Ans A search engine is a plateform on which a user can search the internet

content. Google is one of the, Yahoo, Bing, Baidu & Duck Duk Go google is one of the most used search engine world-wide that is used with the chrome browsers.

Q.12 What is Internet & W.W.W.? What are the uses of Internet in our daily life?

Ans * Internet :→ The internet is a vast network that connects computer all over the world. Through the internet people can share information & communication from anywhere with internet connection.

* W.W.W :→ (World wide web) commanly referred to as www, w3 or the web is an interconned system of public webpages accesible through the Internet. The web is not the as the Internet the web is one of many application built on the top of the Internet.

* Uses of Internet :

- Uses of internet in Education. The Internet is a great plateform for students to learn throughout their life time.
- Internet use to speed up daily task.
- Use of Internet for shopping.
- Digital transactions.
- Money management
- Tour and travel

Q13 What is an Internet service Provider ? Give some examples of ISP in India.

Ans ISP company that provides Internet connections & services to individuals & organization. In addition to providing access to the Internet, ISPs may also provide software package email accounts, & a personal web site or home page.

* Examples of ISP
  - Bharti Airtel
  - Hathway cable
  - Tata communication
  - Yoo telecom
  - Sify Broadband
  - Reliance communications.

Q14 Discuss the difference between MAC Address, IP Address & Port address

Ans

MAC Address	IP Address	Port Address
• Unique identifier that is assigned to a network interface controller/ card.	It is an address that helps you to identify a network connection	Port number has 16 bits.
• The full form of MAC address is Media Access control address.	The full for IP address is Internet Protocol Address.	Port number for application is provided by kernel of OS.

• It is assigned by the manufacture of the interface hardware • MAC address is separated by colons. • MAC address is hardware oriented	It is assigned by the network administrator or ISP. IP address is separated by dots. IP address is software oriented.	Port number is the address of the layer-4 protocols. Port number are logical interfaces communication protocol. New states including available

Q15 How do we view my internet browser history.

Ans 1. Go to your google account
2. On the left navigation panel, click Data & privacy.
3. Under "History setting" click my activity.
4. To view your activity. At the top, use the search & filters to find specific activity.