CCA-102: Data Communications

ASSIGNMENT

1. What are the different types of networks?

   Ans: The different types of network are

   1. Local Area Network (LAN)
   2. Personal Area Network (PAN)
   3. Metropolitan Area Network (MAN)
   4. Wide Area Network (WAN).

2. Explain the Shielded twisted pair (STP) and Unshielded twisted pair (UTP).

Ans: A shielded twisted pair is a type of twisted pair cable that contains an extra wrapping foil or copper braid jacket to protect the cable from defect like cuts, losing bandwith, noise, and signal to the interference. It is a cable that is used underground, and therefore it is costly than UTP. It supports the higher data transmission rates across the long distance. We can also say it is a cable with metal sheath or coating that surround each pair of the insulated conductor to protect the wire from external users and prevent electromagnetic noise from penetrating.

UTP is an unshielded twisted pair cable pair used in computer and telecommunications mediums. Its frequency range is suitable for transmitting both data and voice via a UTP cable. Therefore, it is widely used in the telephone, computers, etc. it is a pair of insulated copper wires twisted together to reduce noise generated by external interference. It is a wire with no additional shielding, like aluminium foil, to protect its data from the exterior.

3. What is difference between baseband and broadband transmission?

Ans:

Baseband Transmission	Broadband Transmission
1. In baseband transmission, the type of signaling used is digital. 2. Baseband Transmission is bidirectional in nature. 3. Signals can travel over short distances. 4. It works well with bus topology. 5. Baseband transmission have 50 ohm impedance.	1. In broadband transmission, the type of signalling used is analog. 2. Broadband Transmission is unidirectional in nature. 3. Signals can be travelled over long distances without being attenuated. 4. It is used with a bus as well as tree topology. 5. Broadband transmission have 70 ohm impedance.

4. What is the difference between a hub, modem, router and a switch?

Ans:

1. Hub:

A hub is a device that allows several network devices to connect together to exchange data on asingle network however, they have no management component. Network hubs are also known as repeaters.They are less 'intelligent' than switches. Unlike switches, which forward data to the intended device, hubs merely sends the data packets to all its ports. So as the name repeaters suggested, it only repeats the data from an incoming port to all the other devices; this leads to frequent collision between packets.

2. Modem:

A modem is short for a modulator-demodulator. Its function is to facilitate the transmission of data, by covering an analog signal to code and decoding digital information.

3. Router:

A network routers directs the data packets along networks. A router has a minimum of two networks, usually LANs or WANs or a ISP. However, unlike a modem, it cannot work single standing, however is able to connects to multiple nodes.

4. Switch:

A switch is a network segments on a signal network. It connects many devices together on the same network, sending data to a device that needs or requests it. A switch is a able to improve the performance of a network by increasing network capacity.

Switch	Router	Modem	Hub
Joins several computers together within one local area network. They cannot join multiple networks and are incapable of sharing an internet connection.	Joins multiple areas networks (LAN & WAN). Serving as "middle man" or intermediate destination for network traffic. Using the IP they forward data to specific destination.	Modems, like router connects home PCs to the internet.	Connects a network of personal together so they can be joined through a central hub.

5. When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Ans: Yes, that is because MAC addresses are hardwires into the NIC circuity, not the PC. This also means that a PC have a different MAC addr3ess when another one replaced the NIC card.

6. When troubleshooting computer network problems, what common hardware-related problems can occur?

Ans: A large percentage of a network is made up of hardware. Problem is these areas can range from malfunctioning hard drives, broken NICs and even hardware startups.

7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

Ans: In a network that contains two servers and twenty workstations, the best place to install Anti-virus program is to install in all the computers, system or workstations. If we want to installed only in one system, install in the main server.

8. Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.

Ans:

Static IP: A computer on the internet can have a static IP address, which meant stays the same overtime, or a dynamic IP address, which mean the address can change over time.

Dynamic IP: A Dynamic IP is a temporary address for devices connected to a network that continually changes over time.

Difference between IPV4 and IPV6:

IPV4 and IPV6 are internet protocol version 6. Ip version 6 is the new version of internet protocol, which is way better than IP version 4 in terms of complexity and efficiency.

9. Discuss TCP/IP model in detail.

Ans: TCP\IP Reference Model is a four-layered suite of communication protocols. It was developed by the DoD (Development of Defense) in the 1990s. It is named after the two main protocol that are used in the model namely, TCP and IP. TCP stands for Transmission Control Protocol and IP stands for Internet Protocols.

10. What is a Web Browser (Browser)? Give some example of browsers.

Ans: A web browser is an application used to access and view websites.

Some examples of browsers includes Microsoft Edge, internet explorer, Google Chrome, Mozilla firefox and apple safari.

11. What is a search engine? Give example.

Ans: A search engine is a web based tool enables user to located information on the world wide web (WWW).

12. What is the Internet & WWW? What are the uses of internet in our daily life?

Ans: Internet is a vast network that connects computers all over the world. Through the internet, people can share information and communication from anywhere with an internet connection.

World Wide Web(WWW) is an interconnected system of public web pages accessible through the internet.

Uses of internet in our daily life. This very much useful in our daily routine task. For example, it helps us to see our notification and emails. A part from this, people can use the internet for money transfer, shopping, order online food, etc.

13. What is an Internet Service Provider? Give some example of ISP in India.

Ans: An internet Service Provider is an organization that provides for accessing using or participation in the internet.

14. Discuss the difference between MAC address, IP address and Port address.

Ans: A MAC address is assigned to the network interface card by the manufacture and in used for communication within the local area network. It is globally unique address.

An IP address is used for communication within the local area network and the communication between internet. It is uniquely identifies the connection of the network with that devices takes in a network.

Port address of the service within the system. A port number uniquely identifies a network based application on the computer.

15. How do we view my Internet browser's history?

Ans: In the lower-left corner of the browser window, tap and hold back arrow. The page that apens contain your browser histroy.