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 bandwidth, 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:

Broadband	Baseband
1. Analog signaling. 2. Transmission of data is unidirectional. 3. Signal travelli9ng distance is long. 4. Frequency division multiplexing possible. 5. Simultaneous transmission of multiple signals over different frequencies.	1.Digital signaling. 2.Frequency division multiplexing is not possible. 3.Baseband is bi- directional transmission. 4.Short distance signal travelling. 5.Entire bandwidth is for single signal transmission. 6.Example; Ethernet is using Basebands for LAN.

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 to connect together to exchange data on a single 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 to all its ports. So as the name repeaters frequent collision between packets.

2. Modem:

A modem is short for a modulator- demodulator. Its function is to facilitate the transmission of data, by converting an analogue 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 LAN and its ISP. However, unlike a modem, it cannot work single standing however is able to connect to multiple nodes.

4.Switch:

A switch is a network that connect network segments on a single network. It connects many devices together on the same network, sending data to a device that needs or requests it. A switch is 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 area networks (LAN & WAN). Serving as "middle man" or intermediate destinations for networks traffic. Using the IP they forward data to specific destination.	Modems, like router connect home PCs to the internet.	Connects a network of personal computer so they can 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 address are hardwires into NIC circuity, not the PC. This also means that a PC can have a different MAC address 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 severs 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 sever.

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 meat 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.

Different between IPV4 and IPV6:

IPV4 and IPV6 are internet protocol version6. IP version 6 is the new version of internet protocol, which is way to 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 1060s. It is named after the two main protocol that are used in the model namely, TCP and IP. TCP stand Transmission Control Protocol and IP stand 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 browser 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 that enables users to located information on the word 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 communicated from anywhere with an internet connection.

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

Uses of internet in our daily life. This is very much useful in our routine task. For example, it helps us to see our notification and emails. A part from this, people can use the internet for money 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 provide services for accessing using or participation in the internet.

Examples of ISP in India are: Airtel, BSNL etc.

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 used uniquely identifies the connection of the network with that device takes part in a network.

Port address of the service within the system. A port number uniquely 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, tab and hold the back arrow. The page that opens contain your browser history.