CCA-102: Data communications

ASSIGNMENT

Q1. What are the different types of networks?

Ans: The different types of networks are:

i. Personal Area Network (PAN) ii.

Local Area Network (LAN) iii.

Metropolitan Area Network (MAN) iv.

Wide Area Network (WAN)

Q2. Explain the Shielded twisted pair (STP) and Unshielded twisted pair (UTP).

Ans: 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 defects like cuts, losing bandwidth, noise, and signal to the interference. It is a cable that is usually 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 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.

Q3. What is the difference between baseband and broadband transmission?

Ans: Baseband refers to a single-channel digital system and that single channel is used to communicate with devices on a network.

Broadband, is the wide bandwidth data transmission which generates an analog carries frequency, which carries multiple digitals signals or multiple channels.

Q4. What is the difference between a hub, modem, router, and a switch?

Ans: 1. Hub: Hub is just a connector and connects the wires coming from different slides. There is no signal processing or regeneration.

2. Modem: A modem is short for a modulator-demodulator code and its function is to facilitate the transmission of data, by converting an analogue signal to decoding digital information.

3. Router: Router is a network router directs the data packets along networks. A router ha a minimum of two networks, usually LANs or WANs or a LANs or its ISP.

4. Switch: Switch is a point to communication device. Its operator at the data link layer of OST model.
It uses switching table top find out the correct destination.

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 multiples area networks (LAN & WAN). Serving as "middle man" or intermediate destinations for network traffic. Using the IP they forward data to specific destination.	Modems, like router connect home PCs to the internet.	Connects a network of personal computers together so they can be joined through a central hub.

Q5. When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Ans: Yes, it is because MAC address are hardwires into the NIC circuit, not the PC. This also means that a PC can have a different MAC address when another one replaced the NIC card.

Q6. 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.

Q7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

Ans: The best solution is to install Anti-virus program on all the computers in the network.

Q8. 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 means it stays the same overtime or a dynamic IP address, which means the address can change overtime.

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

Difference between IPV4 and IPV6:

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

Q9. 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 1960s. It is named after the two main protocols that are used in the

model namely, TCP and IP. TCP stands for Transmission Control Protocol and IP stands for Internet Protocol.

Q10. What is Web Browser? Give some examples of browsers.

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

Some examples of web browsers include Microsoft Edge, Internet Explorer, Google Chrome, Mozilla Firefox and Apple Safari.

Q11. What is search engine? Give example.

Ans: A search engine is a web base tool that enables users to locate information on the World Wide Web (WWW).

Example: Google, Yahoo and MSN Search.

Q12. What is the Internet and 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 communicate 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. The Internet is 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 be used the Internet for money transfer, shopping, order online food, etc.

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

Ans: An Internet Service Provider is an organization that provides services for accessing using or participating in the Internet.

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

Q14. 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 is used for communication within the local area network. It is globally unique address.

An IP address is used for the communication within the local area network and for the communication between internet. It is uniquely identified 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 identifies a network base application on a computer.

Q15. How do we view my Internet browser's history?

Ans: In the lower-left corner of the browser window, tap and hold the back arrow. The page that opens contains our browser history.