CCA-102: Data Communications

ASSIGNMENT

Q1. What are the different types of networks?

Ans: The different types of network are:

I. LAN (Local Area Network)
II. PAN (Personal Area Network)
III. MAN (Metropolitan Area Network)
IV. WAN (Wide Area Network)

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

Ans:

UTP	STP
It is an unshielded twisted pair.	It is a shielded twisted pair.
It does not require a grounding cable.	It requires a grounding cable.
UTP has high crosstalk	STP has low crosstalk

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

Ans:

BASEBAND	BROADBAND
Communication is bi-directional which means the same channel is used to transmit and receive signals.	Communication is unidirectional meaning two different channel are needed in order to send and receive signals.

Baseband LANs are inexpensive and easier to install and maintain.	Broadband systems are generally more expensive because of the additional hardware involved.
Baseband LANs have a limited distance reach which is no more than a couple miles.	Broadband LANs span much longer distances than baseband (up to tens of kilometers).

Q4. 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 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 send the data packets to all its ports. So as the name repeaters suggests, it only repeats the data from an incoming port to all the other devices; this leads to frequent collisions 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 signal 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 capability.

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 network (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.

Q 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 the NIC circuity, not the PC. This also means that a Pc can have a difference 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 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 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 overtime.

Different 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.

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 the 1960s. 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 protocol.

Q10. What is web browser (Browser)? Give some examples of browsers.

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

Some example of browsers includes Microsoft edge, internet explorer, chrome, Mozilla fire fox and apple safari.

Q11. What is a search engine? Give example.

Ans: A search engine is a Web Based tool that enables to locate information on the world wide web (WWW).

Example: google, Yahoo

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 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 use the internet for money transfer, shopping, order online food, etc.

Q13. 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: 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 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 device takes part in a network.

Port address of the service within the system. A port number uniquely identifies a Network Based application on the 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 contain your browser history.