CCA-102: Data Communications

ASSIGNMENT

1. What are the different types of networks?
2. Explain the Shielded twisted pair (STP) and Unshielded twisted pair(UTP)
3. What is difference between baseband and broadband transmission?
4. What is the difference between a hub, modem, router and a switch?
5. When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?
6. When troubleshooting computer network problems, what common hardware-related problems can occur?
7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?
8. Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.
9. Discuss TCP/IP model in detail.
10. What is a Web Browser (Browser)? Give some example of browsers.
11. What is a search engine? Give example.
12. What is the Internet & WWW? What are the uses of internet in our daily life?
13. What is an Internet Service Provider? Give some example of ISP in India.
14. Discuss the difference between MAC address, IP address and Port address.
15. How do we view my Internet browser's history?

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ASSIGNMENT - 02

CCA-102

1. What are the different types of networks?

Ans :- There are 4 types of networks used in todays era.

1. LAN
2. MAN
3. WAN
4. WLAN

* **LAN :-** A Local Area Network is basically defined within a small physical area.

* **MAN :-** A Metropolitan Area Network is designed to extend over an entire city.

* **WAN :-** The Wide Area Network provides A long distance transmission of data, voice, images and videos information over a large geographical area.

* **WLAN :-** A Wireless Local Area Network that links two or more devices using wireless communication to from a local area network within a limited area.

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

Ans :- **UTP :-** UTP is the type of twisted pair cable. It is stands for Unshielded twisted pair. Both data and voice are transmitted through UTP because its frequency range is suitable

STP :- STP is also the type of twisted pair which stands for Shielded twisted pair. It STP grounding cable is required but in UTP grounding cable is not required. In STP much more maintenance are needed therefore it is costlier than UTP.

Q:-3. What is difference between baseband and broadband transmission?

Ans:- *Baseband Transmission:-

Baseband is a digital signal is transmitted on the medium using one of the signal codes like NRZ, RZ Manchester biphase-M code etc. is called baseband transmission.

* Broadband Transmission:-

Broadband system use modulation techniques to reduce the effect of noise in the environment. Broadband transmission employs multiple channel unidirectional transmission using combination of phase and amplitude modulation.

These are following differences between Baseband and Broadband transmission.

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

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

Ans:- Modem:-

Modem stands for "Modulating-Demodulating. Modems are hardware devices that allow a computer

or another device, such as a router or switch, to connect to the Internet. They convert or modulate an analog signal from a cable wire to digital data that a Computer can recognize.

* Routers:- Routers are responsible for sending data from one network to another. Typically, routers today will perform the functionality of both a router and a switch.

* Switches:- They use the MAC address of a device to send data only to the port the destination device is plugged into.

* Hubs:- Unlike switches, hubs broadcast data to all ports, which is inefficient, so hub are basically multiport repeaters.

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

Q:-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. Problems in these areas can range from malfunctioning hard drives, broken NIC's and even hardware startups. Incorrect hardware configuration is also one of those culprits to look into.

Q:-7. 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 a network. This will protect each device from the other in case some malicious user tries to insert a virus into the servers or legitimate users.

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

Ans:-

Static IP:- A Static address is an IP address that always stays the same. A static IP address is usually more expensive than a dynamic IP address.

Dynamic IP:- A dynamic IP address is an IP address that an ISP lets you use temporarily. If a dynamic address is not in use, it can be automatically assigned to different device.

* Difference between IPV4 and IPV6.

IPV4	IPV6
1. IPV4 has a 32-bit address length.	1. IPV6 has a 128-bit address length.
2. It Supports Manual and DHCP address configuration.	2. It supports Auto and renumbering address configuration
3. IPV4 has a header of 20-60 Bytes	3. IPV4 has header of 40 bytes fixed.
4. It has broadcast message Transmission Scheme.	4. In IPV6 multicast and anycast message transmission Scheme is available.
5. The Security feature is dependent on application.	5. IPSEC is an inbuilt security feature in the IPV6 protocol.

Q:-9. Discuss TCP/IP model in detail.

Ans:- The TCP/IP and OSI are most widely used communication networking protocols.

The TCP/IP protocols layout standards on which the internet was created, while the OSI model provides guidelines on how communication has to be done. Therefore, TCP/IP, on the other hand, is widely used establish links and network interaction.

TCP/IP consists of just four layers, while the OSI model consists of the following seven layers.

OSI	TCP/IP
1. Application 2. Presentation 3. Session	1. Application (SMTP, FTP, HTTP, DNS, TELNET)
4. Transport	2. Transport (SCTP, TCP, UDP)
5. Network	3. Network (ICMP, IGMP, RARP, ARP)
6. Data link 7. Physical	4. Physical (Host-to-Network)

Q:-10. What is a Web Browser? Give some example of browsers.

Ans:- Web Browser

A application software used to access information on the WWW is called a Web Browser. When a user requests some information, the web browser fetches the data for a web server and then displays the webpage on the user's screen.

Examples:- Google Chrome, Mozilla Firefox, Internet Explorer, Opera Mini, Safari etc.

Q:-11. What is a Search Engine? Give example.

Ans:- **Search Engine:-** A Search Engine is a service that allows Internet users to search for content via the WWW. A user enters keywords or key phrases into a search engine and recives a list of Web content results in the form of websites, images, video or other online data that sematically match with the search query.

Example:- Google, Bing, Yahoo, AOL, Ask.com, DuckDuckGo.

Q:-12. What is the Internet and WWW? What are the uses of internet in our daily life?

Ans:- **Internet:-** The 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.

WWW:- World Wide Web, which is also known as a Web, is a collection of websits or web pages stored in web servers and connected to local computer through the Internet. These websites contain text pages, digital images, audios, videos, etc.

Uses of Internet:-

1. Communication.
2. Education
3. Online Job Search
4. Entertainment
5. Shopping
6. Online Banking
7. Book Tickets
8. Ordering Food.
9. Research
10. Bill Payment.

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

Ans:- Internet Service Provider (ISP), company that provides Internet connections and services to individuals and organizations. In addition to providing access to the Internet, ISP's may also provide software packages, email accounts and a personal website or homepage.

* Example of ISP in India

1. BSNL.
2. MTNL
3. Bharati Airtel
4. Tata Communications
5. Reliance Communications
6. MFCL Infotel.

Q:-14. Discuss the difference between MAC address, IP address and Port Address.

Ans:- MAC Address:- A Mac Address is assigned to the network interface card by the manufacturer and is used to communication within the local area network. It is a globally unique address.

IP Address:- An IP Address is used for communication within the local area network and for communication between networks (usually through the Internet).

~~Port Address~~:
Port Address:- Port number is the part of the addressing information used to identify the senders and receivers of messages in computer networking. Different port numbers are used to determine what protocol incoming traffic should be directed to.

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

Ans:- 1. Click on customize and control or Application Menu. in the top-right corner of the window.

2. Click on History option. Now You can see the history of the browser. or Press Ctrl+H

3. If you want to clean or clear your browser history.

3. Click on Clear Browsing data.

The End

Thanks !