CCA-102: Data Communications

ASSIGNMENT

1. What are the different types of networks?

Ans: LAN, Ethernet, WLAN, WAN, MAN .

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

Ans: Shielded twisted pair: shielded twisted pair cable (STP) has the individual pairs of wires wrapped in foil, which are then wrapped again for double protection.

Unshielded twisted pair: Unshielded twisted pair cable (UTP) has each pair of wires twistedtogether. Those wires are then wrapped in tubing without any other protection.

3. What is difference between baseband and broadband transmission?

Ans:

- Baseband transmission uses the entire bandwidth of the cable for a single signal, while broadband transmission uses multiple frequencies for multiple signals.
- Baseband transmission is low cost, simple, and uni-channel, while broadband transmission is multichannel, high speed, and requires more complex equipment.
- Baseband transmission supports short distance signal coverage, while broadband transmission supports long distance signal coverage.

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

Ans:

- Hub: A hub is a device that connects multiple devices together and broadcasts data to all connected devices.
- Modem: A modem is a device that connects a computer or router to the internet service provider (ISP) network.
- Router: A router is a device that connects multiple networks together and routes data between them.
- Switch: A switch is a device that connects multiple devices together and sends data only to the device that needs it.

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

transferred as well?

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Ans: Yes, that's because MAC addresses are hard-wired into the NIC circuitry, not the PC. This also means that a PC can have a different MAC address when the NIC card was replace by another one.

6. When troubleshooting computer network problems, what common hardware-related problems can occur?
   Ans: Most common hardware related problems are PaBX, LAN Card, WLAN Card and Wi-Fi AP if it is wireless, Cables, Switches, Routers and Wireless Controllers. Most problems are hardware related, a faulty power cable or power supply unit. Sometimes RAM needs to be upgraded or VGA cable is not properly connected.

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 place to install the Anti-virus program, is in **the servers**, because the servers is like the
   main brain to the network and all the data that comes from the Anti-virus program will go through it to all workstations.

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

Ans:

Static IP: A static IP address is an IP address that always stays the same. If you have a web server, FTP server, or other Internet resource that must have an address that cannot change, you can get a static IP address from your ISP. A static IP address is usually more expensive than a dynamic IP address, and some ISPs do not supply static IP addresses. You must configure a static IP address manually.

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 a different device. Dynamic IP addresses are assigned using either DHCP or PPPoE.

The difference between IPV4 and IPV6:

IPv4	IPv6
IPv4 has a 32-bit address length	IPv6 has a 128-bit address length
It Supports Manual and DHCP address configuration	It supports Auto and renumbering address configuration
In IPv4 end to end, connection integrity is Unachievable	In IPv6 end-to-end, connection integrity is Achievable
It can generate 4.29×109 address space	The address space of IPv6 is quite large it can produce 3.4×1038 address space

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9. Discuss TCP/IP model in detail.

Ans: It stands for Transmission Control Protocol/Internet Protocol. The TCP/IP model is a concise version of the OSI model. It contains four layers, unlike the seven layers in the OSI model. The number of layers is sometimes referred to as five or four. The Physical Layer and Data Link Layer are referred to as one single layer as the 'Physical Layer' or 'Network Interface Layer' in the 4-layer reference.

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.

Examples of web browser:

- Google Chrome
- Internet Explorer
- Mozilla Firefox
- Apple Safari
- Microsoft Edge

11. What is a search engine? Give example.

Ans: A search engine is a program or a website that helps you find information on the internet by matching your keywords or queries with relevant web pages.

Some popular examples of search engines are:

- Google
- Yahoo!
- MSN Search
- Bing

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

Ans: The internet is a global network connecting millions of users worldwide via many computer network using a simple standard common addressing system and basic communications protocol called TCP/ IP. The World Wide Web, or simply web, is a way of accessing information over the medium of the internet.

- For information: to access websites and search for information.
- For business and advertising: to promote and advertise businesses.
- For education: to access educational resources.
- For communication and networking: to connect with others.
- For entertainment: to watch movies, listen to music, and play games.

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

Ans: An Internet Service Provider (ISP) is a company such as AT&T, Verizon, Comcast, or Spectrum that provides Internet access to companies, families, and even mobile users.

For example; Verizon, AT&T, Spectrum, Frontier, and CenturyLink.

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

Ans:

A MAC address (media access control address) is a 12-digit hexadecimal number assigned to each device connected to the network. Primarily specified as a unique identifier during device manufacturing, the MAC address is often found on a device's network interface card (NIC). A MAC address is required when trying to locate a device or when performing diagnostics on a network device.

An Internet Protocol address (IP address) is the logical address of our network hardware by which other devices identify it in a network. IP address stands for Internet Protocol address which is an unique number or a numerical representation that uniquely identifies a specific interface on the network. Each device that is connected to internet an IP address is assigned to it for its unique identification.

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. Port number identifies a specific process to which an Internet or other network message is to be forwarded when it arrives at a server. Ports are identified for each protocol and It is considered as a communication endpoint.

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

Ans:

- On your computer , open Chrome.
- At the top right, click More.
- Click history.

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