CCA-102:DATA COMMUNICATIONS

ASSIGNMENT

1. What are the different types of networks?

PAN (Personal Area Network)

LAN (Local Area Network)

MAN (Metropolitan Area Network)

WAN (Wide Area Network)

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

shielded twisted pair also encloses these wires in a shield and grounds them to further reduce electromagnetic and radio frequency interference.

3. What is difference between baseband and broadband transmission?

Baseband transmission is a data transmission technique in which one signal needs the whole bandwidth of the channel to transfer the data. In contrast, broadband transmission is a transmission technology in which many signals with different frequencies send data across a single channel at the same time.

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

The hub broadcasts all incoming packets to all connected devices without examining destination addresses. A switch forwards packets only to the relevant destination port based on its MAC address table. The router routes packets between different network segments based on destination IP addresses.

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

transferred as well?

Yes, the MAC Address Moves with the NIC Card

6. When troubleshooting computer network problems, what common hardware-related

problems can occur?

Some network problems can arise from faulty hardware, such as routers, switches, firewalls, and even from unexpected usage patterns, like network bandwidth spikes, changes in app configuration, or security breaches.

7. In a network that contains two servers and twenty workstations, where is the best place

to install an Anti-virus program?

he best solution is to install anti-virus on all the computers in the network.

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

Dynamic IP	Static IP
Automatically assigned by DHCP Server	Manually assigned by network administrator or user
DHCP server provides the host IP as well as the DNS IP and router IP	User must know about the available IP pool, default gateway IP, DNS IP etc.
DHCP server automatically renews the IP lease or assigns new IP when network changes	You need to change the IP address in case of any network change
Scalable – DHCP server assigns IP from the available address pool	Not Scalable – need to key in IP multiple times in multiple hosts when network is large
Difficult to identify real machines behind IPs as these addresses are used interchangeably by different hosts	Easier to identify the real device in the network based on IP (we can maintain a mapping of static IP to machine names)
Dynamic IPs are relatively less secure	Static IPs are more secure

9. Discuss TCP/IP model in detail.

The TCP/IP model is a four-layer model that divides network communications into four distinct categories or layers. The model is often referred to as the TCP/IP stack. The four important layers are the application layer, the transport layer, the network layer, and the link layer.

10. What is a Web Browser (Browser)? Give some example of browsers.

Web browser is an application that let you fetch data from internet to your device either it computer or mobilephones or cellphone... ex. Chrome, Mozilla etc.

11. What is a search engine? Give example.

A search engine is a web-based tool that enables users to locate information on the World Wide Web.

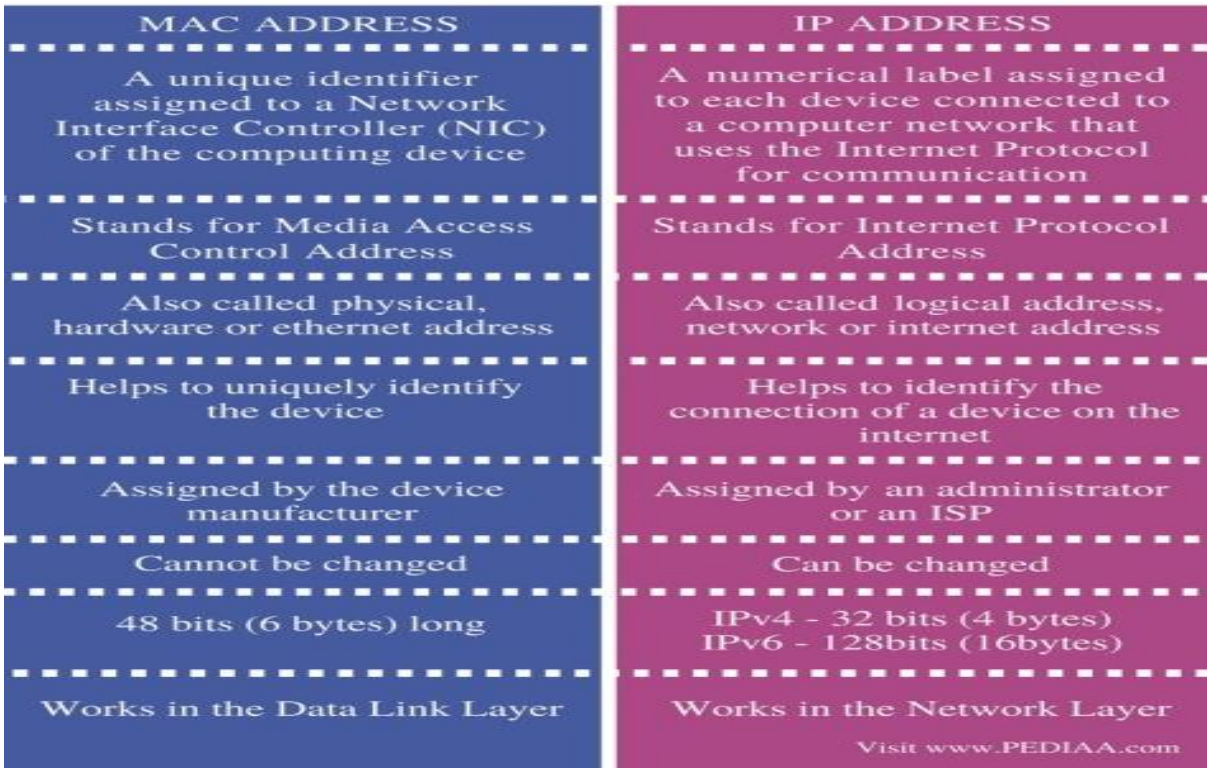
12. What is the Internet & WWW? What are the uses of internet in our daily life?

he Internet offers several advantages, such as instant access to information, faster communication, online education opportunities, and support for digital payments and marketing.

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

The examples of some internet service providers are Hathway, BSNL, Tata teleservices, Verizon, Reliance Jio, ACT Fibernet and many more working in India as well as worldwide.

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



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

Select the History tab, and choose how you want to view your history by selecting a filter from the menu. To delete specific sites, right-click a site from any of these lists and then select Delete. Or, return to a page by selecting any site in the list.