CCA-102: Data Communications
ASSIGNMENT

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Q1. What are the different types of networks?
Ans: The different types of networks are:

a) LAN - Local Area Network
b) WLAN – Wireless Local Area Network
c) WAN – Wide Area Network

Q2. Explain the Shielded twisted pair (STP) and Unshielded twisted pair (UTP)
Ans: 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 cable (UTP) has each pair of wires twisted together. Those wires are then wrapped in tubing without any other protection.

Q3. What is difference between baseband and broadband transmission?
Ans: The baseband signalling transmits the digital signals and involves electrical impulse that is transmitted into a physical medium like wires.
The broadband signalling transmits the analog signals and uses optical fibres and twisted pair as the transmission medium

Q4. What is the difference between a hub, modem, router and a switch?
Ans: Hub Connects two or more Ethernet devices, Does not perform filtering
A modem transforms digital information from your computer into analog signals that can transmit over wires (and vice versa) by modulating and demodulating electrical impulses sent through phone lines, coaxial cables, or other types of wiring.
Router primary responsibility is to direct, or route, data between devices in your home, as well as between those devices and the wider internet.
Switch connects two or more LAN devices, Filters packets before forwarding them

Q5. 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 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.

Q6. 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.

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

Q8. Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.
Ans.: When a device is assigned a static IP address, the address does not change. Most devices use dynamic IP addresses, which are assigned by the network when they connect and change over time.

IPv4 has a 32-bit address length while IPv6 has a 128-bit address length, IPv4 Supports Manual and DHCP address configuration while IPv6 supports Auto and renumbering address configuration, In IPv4 the Security feature is dependent on application while IPSEC is an inbuilt security feature in the IPv6 protocol.

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 (Department of Defence) in the 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.

The four layers in the TCP/IP protocol suite are −
Host-to- Network Layer −It is the lowest layer that is concerned with the physical transmission of data. TCP/IP does not specifically define any protocol here but supports all the standard protocols.
Internet Layer −It defines the protocols for logical transmission of data over the network. The main protocol in this layer is Internet Protocol (IP) and it is supported by the protocols ICMP, IGMP, RARP, and ARP.
Transport Layer − It is responsible for error-free end-to-end delivery of data. The protocols defined here are Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).
Application Layer − This is the topmost layer and defines the interface of host programs with the transport layer services. This layer includes all high-level protocols like Telnet, DNS, HTTP, FTP, SMTP, etc.

Q10. What is a Web Browser (Browser)? Give some example of browsers.
Ans.: A software application used to access information on the World Wide Web is called a Web Browser. When a user requests some information, the web browser fetches the data from a web server and then displays the webpage on the user's screen.
Examples are Chrome. Firefox, MS Edge, Opera etc

Q11. What is a search engine? Give example.
Ans.: A search engine is a web-based tool that enables users to locate information on the World Wide Web. Popular examples of search engines are Google, Yahoo!, and MSN Search.

Q12. What is the Internet & WWW? What are the uses of internet in our daily life?
Ans.: The internet is a public network of network with a maze of wired and wireless connections between separate groups of servers computers and countless devices from around the world.
The World Wide Web is distinguished from other systems through its use of HTTP (Hypertext Transfer Protocol).
The uses of internet in our daily life are Education, Electronic Mail, Job Search, Social Networking, Collaboration & E-Commerce.

Q13. What is an Internet Service Provider? Give some example of ISP in India.
Ans.: An ISP (internet service provider) is a company that provides individuals and organizations access to the internet and other related services.
Some example of ISP in India are Hathway, BSNL, Tata teleservices, Airtel, Reliance Jio, ACT Fibernet etc.

Q14. Discuss the difference between MAC address, IP address and Port address.
Ans.: The main difference between MAC and IP address is that MAC Address is used to ensure the physical address of the computer. It uniquely identifies the devices on a network. While IP addresses are used to uniquely identifies the connection of the network with that device takes part in a network. Port Address is the part of the addressing information used to identify the senders and receivers of messages in computer networking.

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

Ans.: If you want to view your search history to delete or manage certain websites, you can easily do so by navigating to your browser's History settings.

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