CCA-102 : Data Communications

Ques - (1) What are the different types of networks.

Ans- The type of networks are -

(a) LAN
(b) MAN
(c) WAN
(d) WLAN

(a) **LAN (Local Area Network) :-** LANs are networks usually confined to a geographic area, such as a single building or a college campus. LANs can be small, linking as few as three computers, but often link hundreds of computers used by thousands of people.

(b) **MAN (Metropolitan Area Network) :-** MAN is designed to extand over the entire city. It may be as a single network as a cable TV network or it may be means of connecting a number of LANs into a larger network so that resources may be shared as

(c) **WAN (wide Area Network) :-** Wide area Networking combines multiple LANs (like one country to another country) that are geographically separated. This is accomplished by connecting the different LANs using services such as dedicated phone lines, dial-up phone lines (both synchronous and asynchronous), satellite links and date packet carrier services.

(d) **WLAN (wireless Ethernet IEEE 80.211) :-** IEEE has defined the specifications for a wirelless LAN, called IEEE 80.211, which covers the physical and data link layers.

- A Bss without an AP is called an adhoc network, a Bss with an AP is called an infrastructure network.

Ques :- (2) Explain the shielded twisted pair (STP) & Unshielded twisted pair (UTP).

Ans- Shielded twisted pair :- Shielded twisted pair is a special kind of Copper telephone wiring used in some business installed. An Outer Covering or shield is added to the ordinary twisted pair telephone wires; the sheield functions as a ground

Unshielded twisted pair :- The more Common kind of wire that is installed to your home is unshielded twisted pair.

Ques :- (3) What is difference between baseband and broadband transmission?

Ans- Baseband :- 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 :- Broadband system use modulation techniques to reduce the effect of noise in the enviorment. Broadband transmission employs multiple channel unidirectional transmission using Combination of phase and amplitude modulation.

Ques :- (4) What is difference between a hub, Modem, Router and a switch?

Ans- Hub :- A hub is a central hardware device in a network that manages traffic across the network. A hub divides the bandwidth or Communication speed equally among the Computers Connected to it.

Modem :- A Modem is a Computer peripheral that allows you to connect and Communicate with other Computers via telephone lines. It allow you to Combine the power of your Computer with the global reach of the telephone system.

Because ordinary telephone lines cannot Carry digital information, a modem changes the digital data

from your Computer into analog data, a format that can be carried by telephone lines.

Router :- This is a network hardware device which is used to route data across the different parts of the network when the Computers are Connected in wide Area Network (WAN).

Switch :- A Switched is a central hardware device that manages the flow of information among the PCs and devices Connected to it. The rate of flow of information is linked to the speeds backed up by the switch and the devices.

Ques :- (5) When you move the NIC cards from one PC to another PC, does the MAC address gets transferd as well?

Ans- Yes, that 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 the NIC Card was replaced by another one.

Ques :- (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.

Ques :- (7) In a network that Contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

Ans- An antivirus program must be installed on all servers and workstations to ensure protection. That's because individual users can access any workstation and introduce a Computer virus when plugging in their removable hard drives or flash drives.

Ques :- (8) Define static IP and Dynamic IP ? Discuss the difference between IPV4 and IPV6.

Ans- **Static IP & Dynamic IP :-** When a device is assigned a static IP address, the address does not change. Most devices use dynamic IP address, which are assigned by the network when they connect and change over time.

IPV4 has 32-bit address length	IPV has 128-bit address
(1.) It supports manual and DHCP address Configuration.	It supports and renumbering address Configuration.
(2.) In IPV4 end to end Connection integrity is Unachievable.	In IPV6 end to end Connection integrity is Achievable.
(3.) It Can generate 4.29 X109 address space.	Address space of IPV6 is quite large it can produce 3.4X1038 address.
(4.) Security feature is dependent on application.	IPSEC is inbuit security feature in the IPV6 protocol.

Ques :- (9) Discuss TCP/IP model in detail.

Ans- An internet Connection is usually accomplished using international standards Collectively Called Transmission Control protocol / Internet protocol (TCP/IP). TCP/IP is actually a Collection of protocols.

Ques :- (10) What is a web browsser ? Give some Example of browsers.

Ans- **Web Browser :-** We get the information from different websites these websites open in special software or program known as web browser.

Example- Microsoft internet, Explorer, Mozille, Firebox and Netscape Navigator.

Ques :- (11) What is a search engine ? Give Example.

Ans- **Search engine :-** Search engine is a bottom up approach for finding your way arround the web. You give a search engine a list of keywords or phrase (Called a query), and it returns to you

a list of web pages that contains those words or phrases. It is also called as directories.

Example - Internet explorer and Mozilla Firefox.

Ques-(12) What is the Internet & WWW? What are the uses of internet in our daily life?

Ans- Internet :- A protocol is a set of rules, that the computer use to communicate with each other across a network.

WWW (World wide web) :- The world wide web is a collection of millions of files stored in thousand of (computers called web servers) all over the world.

Uses of internet in our daily life :-

- It helps to search information nearly on any topic.
- It is used to purchase various items from home. The bills can be paid online.
- It is the best medium to communicate instantly with people sitting at far off places.
- It is used to send and recieved message using the E-mail facility.

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

Ans- Internet Service Provider :- An Internet service provider is an organization that provides services for accessing, using, or participating in the internet. Internet service providers can be organised in various forms, such as Commercial, Community-owned, non-profit, or otherwise privately owned.

Example of ISP in India - VSNL and Airtel.

Ques :- (14) Discuss the difference between MAC address, IP address and Port address.

Ans- MAC address :- MAC address ensure that physical address of the Computer is unique.

IP address :- IP address is a logical address of the Computer and is used to uniquely locate Computer Connected via a network.

Port address :- In Computer networking, a port is a Communication endpoint. At ~~the~~ the software level, within an operating system, a port is a logical Construct that identifies a specific process or a type of network service.

Ques :- (15) How do we view my Internet browser's History?

Ans- In any chrome window, use the keyboard shortcut ctrl+H, or navigate to the URL chrome://history or click the Menu button, which is located near the top-right side of the browser window, and choose History, then History again.