CCA-102: Data Communications.

Q.1. What are the different types of network?

Ans. There is 11 types of network in use today.

(I) Persnal Area Network (PAN) :- The smallest and mast basic type of network, a PAN is made up of a wireless modem, a computer or two, phones, printers, tablets.

(II) Local area Network (LAN) :- LANs are the mast frequently discussed networks, one of the mast common, one of the mast original and one of the simplest type of network LANs can connect to wide area networks.

(III) Wireless Local Area Network (WLAN) :- Functioning like a LAN, WLANs make uses of wireless network technology, such as wi-fi.

(IV) Campus Area Network (CAN) :- Larger than LANs, but smaller than metropolitan area networks (MANs, explained below) these types of networks are typically seen in Universities.

(V) Metropolitan Area Network (MAN) :- These types of

Signature

networks are larger than LANs but smaller than WANs - and incorporate elements from both types of networks. MANs span an entire geographic area.

(6) Wide Area Network (WAN) :- Slightly more complex than a LAN, a WAN connects computers together across longer physical distances. It is typically owned and maintained by multiple administrators or the public.

(7) Storage - Area Network (SAN) -: SANs can be accessed in the same fashion as a drive attached to a server. Types of storage area networks includes converged, virtual and unified SANs.

(8) System- Area Network (SAN) -: This term is fairly new within the past two decades. The computer connected on a SAN operate as a single system at very high speeds.

(9) Passive Optical Local Area Network (POLAN) -: POLAN uses optical splitters to split an optical signal from one strand of singlemode optical fiber into multiple signals to serve users and devices.

Signature

(10) Enterprise Private Network (EPN):- These types of networks are built and owned by businesses that want to securely connect its various locations to share computer resources.

(11) Virtual Private Network (VPN):- A VPN lets its users send and receive data as if their devices were connected to the private network - even if they're not.

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

Ans. STP Shield twisted pair is a special kind of copper telephone and local area network (LAN) wiring used in some bussiness installation to reduce cross-talk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around each other. Each signal on twisted pair requires both wires.

- UTP :- UTP stands for Unshielded Twisted Pair cable. UTP cable is a 100 ohm copper cable that consists of 20 to 1800 unshielded twisted pairs surrounded by an outer jacket. They have no metallic shield. This makes the cable small in

Signature

diameter but unprotected against electrical interference.

Q3 What is the difference between baseband and broadband transmission?

Ans Baseband :- It 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 ~~sts~~ system use modulation techniques to reduces the effect of noise in the environment. This transmission employs multiple channel unidirectional transmission using combination of phase and amplitude modulation.

Sr.No	Base band	Broadband
1.	The type of signalling used is digital.	The type of signalling used in analog.
(2)	It is bidirectional in nature.	It is unidirectional in nature.
3)	Signal can only travel over short distance.	Signal can be travelled over long distance without being attenuated.
(4)	It works well with bus topology.	It used with a bus as well as tree topology
(5)	Manchester and differential Manchester encoding are used	only PSK encoding is used.

Signature

Q04. What is difference between a hub, modem, router and a switch?

Ans. Hub :

A hub is to sent out a message from one part to other parts. for example, if there is three computer of A, B, C the message sent by a hub for computer A will also come to the other computers. But only computer A will respond and the respond will also go out to every other part on the hub.

(ii) Router :

Router is actually a small computer that can be programed to handle and route the network traffic. It usually connects at least two networks together, such as two LANs, two WANs or a LAN and its ISP network. Routers can calculate the best route for sending data and communicate with each other by Protocals.

(iii) Switch : A switch is able to handle the data and knows the specific addresses to send the musage. It can decide which computer is the message intended for the send the message directly to the right

Signature

Computer. The efficiency of switch has been greatly improved, thus providing a faster network speed.

(4) Modem :-

A piece of equipment that connects two or more computers together by means of a telephone line so that information can go from one to the other.

Q.5 When you move the NIC cards from one PC, to another PC does 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 replaced by another one.

Q6 When troubleshooting Computer network problems, what common hardware-related problems can occur?

Ans. A large percentage of a networks is made up of hardware. Problems in these areas can range from malfunctioning hard drives, broken NICs and even hardware shortages. In-

Signature

- Correctly hardware configuration is also of those culprits to look into.

Q7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-Virus program?

Ans. Antivirus should be on each computer, if you implement server and node base antivirus that will be best for controlling.

There are no special problems just because you are two server and 20 computer. Every general issue will come along with ~~Cisco~~ crical. It will be same as any other computer setup issue.

Q8. Define Static IP and Dynamic IP? Discuss the difference between IPv4 and IPv6.

Ans Static IP address :- 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.

- Dynamic IP address :- 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

Signature

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

The main difference between IPv4 and IPv6 is the address size of IP addresses. The IPv4 is a 32-bit address, whereas IPv6 is a 128-bit hexadecimal address. IPv6 provides a large address space, and it contains a simple header as compared to IPv4.

Q.9 Discuss TCP/IP model in detail?

Ans: TCP/IP Reference Model is a four layered suite of communication protocols. TCP stands for Transmission control Protocol and IP stands for Internet Protocol. The four layers in the TCP/IP protocol suits are Host-to-Network layer - It is the lowest layer that is concerned with the physical transmission of data. TCP/IP is more reliable. TCP/IP does not have very strict boundaries. It follows a horizontal approach. It uses both session and presentation layers in the application layer itself. TCP/IP developed protocols then model. TCP/IP model network layer only provides connection less services. Protocol cannot be replaced easily in TCP/IP model.

Signature

SANVI

Page 9
Dated

Q.10 What is the Web Browser? Give some example of browsers.

Ans. A web Browser, or simply "browser." is an application used to access and view Websites. Common web browsers include Microsoft Internet Explorer, Google Chrome, Mozilla Firefore, and Apple Safari. For example, Ajax enables a browser on a webpage without the need to reload the page.

A web browser is a computer software application that allows people to browse website on the internet. Most browser are free and they often come pre-installed on computer.

Q.11 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~~ It is a software program that helps people find the information they are looking for online using keybords or phrases. Search engine are able to return result quickly even with millions of websites online by scanning the internet continuously and indexing every page they find. The

Signature

SANVI

Page 10
Dated

1 Popular examples of search engine are Google, Yahoo!, and MSN Search.

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

Ans. Internet is a global network of networks. Internet is a means of connecting a computer to any other computer anywhere in the world. This is a vast network that connects computers all over the world. Through the Internet, people can share information and communication from anywhere with an Internet connection.

WWW (The world wide web), commonly known as web, is an information system where documents and other web resources are identified by Uniform Resources Locator, es which may be interlinked by hyperlinks, and are accessible over the Internet.

There are many uses of the Internet, however, the use of the internet in our daily life depends on individual requirements and goals.

- uses of the internet in Education.
- Internet uses to sped up daily tasks.
- uses of the Internet for shopping and communication.
- Business Promotion and innovation,
- Research & development

Signature

SANVI

Page 11
Dated

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

Ans. An Internet service provider is an organization that provides a myriad of service for accessing, using, or participating in the internet. Internet service providers can be organized in various forms, such as commercial, community-owned, non-profit, or otherwise privately owned. ISP uses fibir optics, satellite, copper wire, and other forms to provide internet access to its customer. Major ISP in India is state Government owned Company BSNL, Airtel India, Jio.

Q.14 Discuss the differnce between MAC, IP address and Port address.

Ans: MAC address:

A media access control address (MAC address) is a unique identifier assigned to network interface controller (NIC) for uses as a network address in communications within a network segment. This use is common in most IEEE 802 networking technologies, including Ethernet, Wi-fi, and Bluetooth.

IP address: An IP address is a string of

Signature

numbers assigned to an internet connected device, much like an address on a house. Your computer network uses IP address to communicate with other computer, website and all parts of cyberspace.

Port address:

A port number is the logical address of each application or process that uses a network or the internet to communicate. A port number uniquely identifies a network-based application on a computer.

The main difference between MAC and IP address is that, MAC address is used to ensure the physical address of computer. while IP address are used to uniquely identifies the connection of network with that device take part in a network.

Q15 How do view my internet browser's history?

Ans On your system, open the Chrome app. At the top right tap more. History. If your address bar is at the bottom, swipe up on the address bar. Tap History.
To visit a site, tap the entry. To open the site in a new tab, touch and hold

Signature

the entry. At the top right, tap more. open new tab. On 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.

Signature