AN

ASSIGMENT ON

DATA COMMUNICATIONS

CCA -102

Q1. what are the difference parts type of network?

Ans There are eight type of network are :-

1. personal Area Network (PAN).
2. local Area Network (LAN).
3. wireless local Area Network (WLAN).
4. Compus Area Network (CAN)
5. Metropolitan Area Network (MAN)
6. Wide Area Network (WAN).
7. Storage - Area Network (SAN).
8. system - Area Network (also known as SAN)

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Q.2 Explain the shielded twisted pair (STP) and unshielded twisted pair (UTP)

Ans Shielded twisted pair is a special kind of copper telepone wiring used in some business installations. To reduce crosstalk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around. each signal on twisted pair requires both wires.

unshielded twisted pair (UTP) cables are widely used in the computer and telecommunications industry as Ethernet cables and telephone wire. In an UTP cable, conductors which from a single circuit are twisted around each other in order to cancel out electromagnetic ~~int~~ interference (EMI) from external sources.

Q3. What is difference between baseband and broad band transmission?

Ans Baseband is a signal that has a near-zero frequency range, i.e a spectral magnitude that is non zero only for frequencies in the vicinity of the origin and negligible elsewhere. Baseband refers to the original frequency range of a transmission signal before it is converted, or modulated, to a different frequency range.

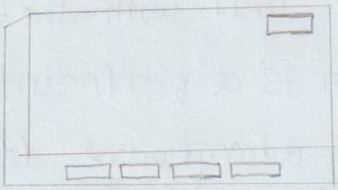
Broadband Transmission is a signaling technology that sends signals simultaneously over of a range of different frequencies as electro-magnetic waves. The bandwidth of a broadband system can usually carry multiple, simultaneous data signals.

Q-4 what is the difference between a hub, modem router and a switch?

Ans = A hub :- Those hubs which operate below the physical lay are passive hub. Those hubs which operate at the physical layer are called a repeater or an active hub.

> A passive hub is just a connector. Its connects the wire coming from different branches.

> An active hub is a actually a multiparts repeater.



> Repeater :- Repeater are low-level devices that just amplify or regenerate weak signals.

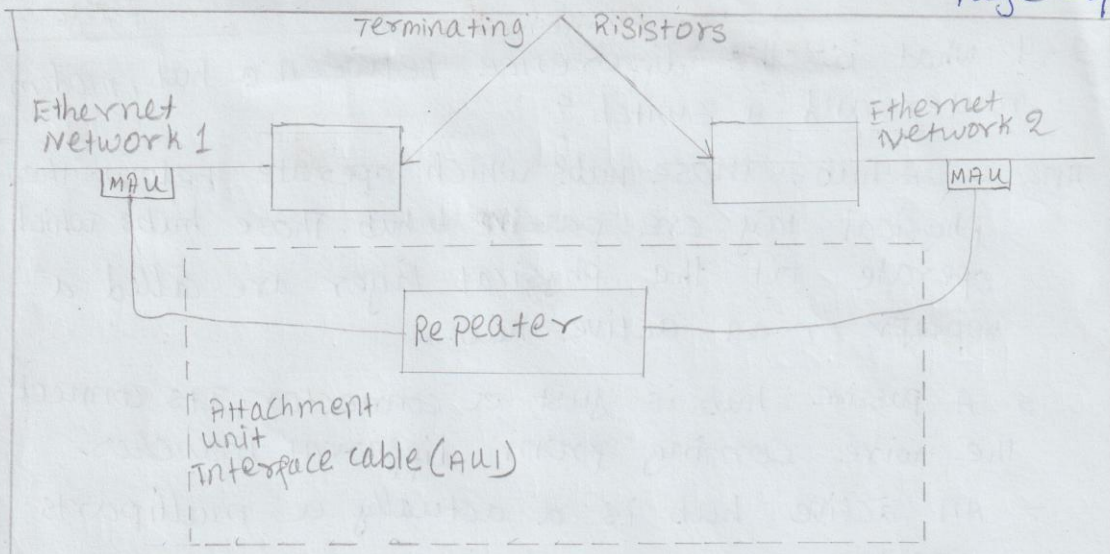
> A reapeater is a divice that operate only in the Physical layer

> signals that carry information within a network can travel a fixed distance before attenuation endangers the integrity of the data.

> A reapeater receive a signal and, before it becomes too.

> weak or corrupted, regenerates the orginal bit pattern

> The repeater then send the refreshed of a LAN




MAU (medium Attachment unit) and AUI can be optionally combined in asingle unit with the Repeater.

> Modem :- A modem is a portmanteau of "modulator -demodulator" - is a hardware device that converts data from a digital format, intended.

> A modem modulates and demodulates electricals signals sent through phone line, coaxial cables, or other types of wiring in other words it transforms digital information from your computer into analog signals that can transmit over wires, and it can translate incoming analog signals back into digital data.

* Router :-

> Router are conceptually similar to bridge, except that they are found in the network layers.

> They just take incoming packets from one line and forward they on another, just as all routers

do but the lines may belong to different networks and use different protocols

> A routers is a three-layer devices that routes packets based on their logical addresses (host-to-host addressing).

> A router normally connects LANS and WANS in the internet and has a routing table that is used for making decisions about the rate.

> The routing tables are normally dynamic and are updated using routing protocols.

A switch :

> when we use the term switch, we must be careful because a switch can mean two different thing

> we must clarify the term by adding the level at which the device operates.

> we can have a layer 2 (L2) switch or a layer 3 (L3) switch

> The L3 ~~switch~~ switch performs up to the network layer and is called router

> The L2 switch performs up to data link layers

> A L2 switch is a bridge

> A L2 switch, as a bridge does, makes a filtering decision based on the MAC address of the frame it received.
> AL2 switch can have a buffer to hold the farmes for processing
> It can have a switching factor that farmers the farmer faster.
> A L3 switch is a router, but a faster and more sophisticated
> The switching fabric in an L3 switch allow faster table look up and forwarding
> L3 switch and router is synonymous.

Q.5. when you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Ans when you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well? 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 another one replaced the NIC card.

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Q6. when troubleshooting computer network problems, what common hardware-related problem can occur?

Ans when troubleshooting computer network problems, what common hardware related problem can occur is a large percentage of a network is made up of hardware-~~prob~~ problems in these areas can range from malfunctioning hard drives, broken NICs, and even hardware start ups.

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

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

Q.8 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 and IPV6 are both IP addresses that are binary numbers. IPV4 is 32 bit binary number while IPV6 is 128 bit binary number address. IPV4 address are separated by periods while IPV6 address are separated by colons. Both are used to identify machines connected to a network.

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Q.9 Discuss TCP/IP model in detail.

Ans TCP/IP Network model ~~VS OSI~~ There are four :-

1) Application layers
2) Transport "
3) Internet "
4) Network Access layers.

1) Application layers :- An application layer is an abstration layer that specifies the shared communications network. The application layer abstraction is used in both of the

Standard models of computer networking: the Internet protocol suite (TCP/IP and the OS I model. Application - layer message data which an application want to send and passed onto the transport layer, transport - layer segment: generated by the transport layer and encapsulates application - layer message with transport layer header: network - layers data gram: encapsulates transport - layer segment with a network - layer

2) Transport layer: The transport layer is the fourth layer in the open system interconnection (OSI) model, and is responsible for end-to-end communication over a network. It provice logical communication between application processes running on different host within a layered architecture of protocols and other network component.

3) Internet layer: Internet layer is the group of internetworking methods, protocols, and specification in the Internet protocol suite that are use to transport network packets from the originating host across network boundories; if necessary, to the destination host specified by an IP address.

network Access Control is an approach to computer security that attempts to unify endpoint security technology, user or system authentication and network security enforcement.

Q.10 What is a web Browser (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 Firefox, and Apple safari. The primary function of a web browser is to render HTML, The code used to design or "mark up" webpages.

for example: Ajax enables a browser to dynamically update information on a webpage without the need to reload the page.

Q.11 what is a search engine? Give example.

Ans A program that searches for and identifies items in a database that correspond to keyword or characters specified by the user, used especially for finding particular sites on the world wide web. A search engine is a software system that is designed to carry out web searches, which means to search the world wide web in a systematic way for particular information specified in a textual web search query.

For example:

The search engine then looks through its index for relevant websites and displays them in the form of a list. The search engine's internal evaluation algorithm determines which position a website will get in the search results. Google, Bing and Yahoo are examples of popular search engines.

Q.12 What is the Internet and www? What are the uses of Internet in our daily life?

Ans The world wide web, or web for short, are the pages you see when you're at a device and you're online. But the internet is the network of connected computers that the web works on as well as what emails and files travel across. Think of the internet as the roads that connect towns and cities together.

The Internet is very much useful in our daily routine tasks. For example, it helps us to see our notifications and emails. Apart from this, people can use the internet for money transfers, shopping order online food, etc.