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CCA - 102 : DATA COMMUNICATIONS
ASSIGNMENT

① ⇒ What are the different types of Networks ?

Different types of Networks :

Personal Area Network (PAN) :
Local Area Network (LAN)
wireless Area Network (WLAN)
Campus Area Network (CAN)
Metropolitan Area Network (MAN)
Wide Area Network (WAN)
Storage - Area Network (SAN)
System - Area Network (Also known as SAN)

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

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.

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Difference between Unshielded Twisted pair and Shielded Twisted pair

1	UTP Stands for Unshielded twisted pair	STP Stands for Shielded twisted pair.
2.	In UTP grounding cable is not necessary	while in STP grounding Cable is required
3.	Data rate in UTP is slower Compared to STP.	Data Rate in STP is high.
4.	The cost of UTP is less.	while STP is costlier than UTP.
5.	In UTP much more maintenance are not needed.	while in STP much more maintenance are needed
6.	In UTP noise is high compared to STP.	while in STP noise is less.
7.	In UTP the generation of crosstalk is also high Compared to STP.	while in STP generation of crosstalk is also less.
8.	In UTP, attenuation is high in Comparison to STP.	while in STP attenuation is low.

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Q.3. What is the differena between baseband and broadband transmission

Ans:→ Differenca between broadband and baseband / Baseband Transmission ⇒

1. Analog signalling.
2. Transmission of Data is unidirectional.
3. Signal travelling distance is long.
4. Frequency division multiplexing possible.
5. Simultaneous transmission of multiple signals over different frequency.
6. Example : Used to transmit Cable TV to premises

⇒ Baseband transmission →

(1). Digital Signalling.
2. Frequency division multiplexing is not possible
3. Baseband is bi-directional trans mission
4. Short distance signal travelling.
5. Entire band width is for singer signal transmission.
6. Example : Ethernet is using basebands for LAN.

Q.4. What is the differena b/w hub, router and a switch.

Hubs, switches, and routers are all devices that let you connect one or more computers to other computers, networks devices, or even other networks. Each has two or more connectors called ports, into which you plug the cables to make the

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Connections

Varying degrees of magic happen inside each device — and therein lies the difference.

In short :-

- Hubs are "dumb" devices that pass on anything recieved on one connection to all other connections.
- Switches are semi-intelligent devices that learn which devices are on which connection.
- Routers are essentially small computers that perform a variety of intelligent tasks.

When you move the NIC card from one PC to another PC, does the MAC address gets transfered as well.

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6> When troubleshooting computer network problems what common hardware - related problems can occur.

When trouble shooting computer network problems, what common hardware - related problems can occur A large precentage of a networks is made up of hardware. Problems in these areas can range from malfunctioning hard drives, Broken NICs, and even hardware startups.

7> In a network that contains two sirvers and twenty workstations, where is the best place to install an Anti-virus programs.

A good firewall. This can stop intrusions, malware, unauthorized access, etc. before they reach the workstations.

2. Antivirus software on the sirvers and at the endpoint workstations. This software should be centraly managed to keep end users med updated constantly to minimize users meddling with the settings. Good antivirus will also protect email clients.

3. Educated and aware users who: Do not casually install downloaded programs : Don't click on unknown links ! Don't fall for phishing emails

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etc. Establish a strong password policy for all users. You should consider not giving users. You should consider not giving your users Administrative rights on their accounts. They will complain that they cannot install what they need and your workload will increase. But I guarantee your entire environment will be more reliable and stable.

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

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.

Difference b/w IPV4 and IPV6?

The main difference b/w 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.

9. Discuss TCP/IP model in detail.

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Ans: TCP/IP stands for transmission Control Protocol Internet Protocols / Internet Protocol and is a suite of communications protocols used to inter connect network devices on the internet. TCP/IP is also used as a communications protocols in a private computer networks (an Intranet or extranet)

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

Ans. Common web browsers include Microsoft Edge, Internet Explorer, Google Chrome, Mozilla Firefox, And Apple Safari.

Web Browser - What is a web / Internet browser:

- Google Chrome
- Mozilla firefox
- Microsoft Edge
- Safari
- Opera
- UC Browser

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

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

Ans. 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 orders. online food etc.

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

Ans: An Internet Service Provider is a company such as AT&T, Verizon, Comcast, or spectrum that provides Internet access to companies, families, and even mobile users. ISPs use fibre-optics, satelite copper wire, and other forms to provides Internet access to its customers.

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

The main adress diffrence between MAC and IP adress is that, MAC address used to ensure the physical adress of Computer. It uniquely identifies that devices on a network. While IP adress are used to uniquely identifies the connection of networks with that device take part in a network

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	MAC ADRESS	IP ADRESS
1	MAC adress Stands for media Acess Control Adress	IP Adress stands for Internet Protocol Adress.
2.	MAC address is a six byte hexadecimal adress.	IP Adress is either four byte (IPv4) or eight byte (IPv6) adress.
3	A device attached with MAC adsess can retrieve by ARP protocol.	A device attached with IP Address can retrieve by RARP protocol.
4.	NIC Card's Manufacturer provides the MAC Address of computer.	IP Address provides IP Adress.
5.	MAC address operates in the physical address of computer.	IP adress operates in the network logical address of the Computer.
6.	MAC adsess operates in the Data link layer.	IP Adress operates in the Network layer.
7.	MAC address helps in simply identifying the device.	IP address identifies the connection of the devices on the Network.
8.	MAC adress of computer cannot be Changed with time and environment.	IP adress modifies with the time and environment.
9.	MAC address can't be found easily by third party.	IP adress can be founded by third party.

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

Ans: See your History:

At the top right, tap more. History. If your address bar is the bottom, swipe up on the address bar. Tap History.

2. To visit a site, tap the entry. To open the site in a new tab, touch and hold entire. At the top right, tap more. Open in new tab. To copy the site touch and hold the entry.