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Assignment - 2

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(CCA-102) Data Communications

Qno1:- What are the different types of network?

Ans Network is the connection of two or more computers that are linked to share files, resources and allow communication. In 1969 first computer-to-computer link was established. Based on number of devices, location and distance between devices, network are of mainly four types, viz.

1) Local Area Network (LAN)
2) Personal Area Network (PAN)
3) Wide Area Network (WAN)
4) Metropolitan Area Network (MAN)

Some other network types:->

5) W-LAN (Wireless-Local Area Network)
6) Storage Area Network (SAN)
7) Virtual Private Network (VPN)

Qno2:→ Explain the Shielded Twisted Pair (STP) and Unshielded Twisted Pair.

Ans:→ STP:→ Shielded Twisted Pair cable has individual pairs of wires wrapped in foil, which are then wrapped again for double protection. These are expensive as these reduce electromagnetic and radio frequency interference.

UTP:→ UTP has each pair of wires twisted together. These wires are then wrapped in tubing without any protection. These are less costly and more popular.

Qno3:→ What is the difference between baseband and broadband transmission?

Ans:→

Baseband Transmission	Broadband Transmission
1) It is a digital signal transmitted on the medium using signal codes.	1) Broadband system use modulation techniques to reduce effect of noise in environment.
2) It is digitally signalling and is bi-directional transmission.	2) It is analog signalling and transmission of data is unidirectional.
3) Example: Ethernet is using basebands for LAN.	3) Example: Used to transmit cable TV to premises.

Qno4:→ What is the difference between a hub, modem, router and a switch?

Ans:→ Hub:→ It is a networking device that works under the physical layer of OSI model and connects a bunch of computers in a LAN. It doesn't filter data.

→ Modem:→ It stands for modulator-demodulator. It is a computer hardware device that converts data from a digital formal into a format suitable for an analog tramission medium such as telephone or radio.

→ Router :→ It is a networking device that operates under the network layer of OSI model and is used to connect two or more networks. It is a device that establishes a common link between networks to enable data flow between them.

→ Switch :→ Switch is a multicast networking device that works under Datalink layer of OSI Model and connects computers in network. It can send a private message by using MAC address to identify which device is connected to which port.

Qno5:→ When you move NIC cards from one PC to another PC, does the MAC address gets transferred as well?

Ans:→ Yes, because MAC addresses are hard-wired into the Network Interface Card (NIC), not the PC.

Qno6:- When troubleshooting computer network problems, what common hardware related problems can occur?

Ans:- A large part of computer network is made up of hardware. While troubleshooting, common problems that can occur range from malfunctioning hard drives, broken NIC's and even hardware startups.

Qno7:- In a network that contains two servers and twenty workstations, what is the best place to install an Anti-virus programme?

Ans:- The best way is to install anti-virus on all computers in the network. This is because individual users can access any workstation and introduce a virus when plugging in their removable hard drives or flash drives.

Qno8:- Define Static IP and Dynamic IP? Discuss difference between IPV4 and IPV6.

Ans Internet Protocol (IP) address is a distinctive numerical symbol alloted to every device on a network to spot each ~~ti~~ affiliation easily.

→ Static IP address doesnot change any time, thus if it is provided once, then it cannot be changed or modified. It is less secure.

→ Dynamic IP is provided by Dynamic Host Configuration

Protocol (DHCP). It changes any time and is more secure.

→ IPV4:→
a) IPV4 is a 32-bit address (4 byte)
b) IPV4 is version 4 of Internet Protocol which can generate 4.29×10^9 address spaces.

→ IPV6:→
a) It has a 128-bit address length.
b) It can generate 3.4×10^{38} address spaces.

Qno9:→ Discuss TCP / IP model in detail.

Ans TCP/IP stands for Transmission Control Protocol / Internet Protocol. TCP/IP is a concise version of the OSI model. It contains four layers instead of seven layers in the OSI model. These are:→
1) Process / Application layer.
2) Host-to-Host / Transport layer.
3) Internet layer
4) Network Access / Link Layer.

TCP/IP is more reliable and follows a horizontal approach. It doesn't have any strict boundaries. The protocols can't be replaced easily in TCP/IP model.

Qno10:→ What is Web-Browser? Give some examples.

Ans:→ A web-Browser is an application used to access and

view websites or webpages. Examples are Microsoft Edge, Mozilla Firefox, Google Crome, Apple Safari, etc.

Qno11:- What is search engine. Give examples.

Ans:- A search engine is a soft-ware system designed to carry out web searches. It is a tool that enables users to locate information on WWW in the form of web-pages. Example: Google, Yahoo, Bing etc.

Qno12:- What is Internet and WWW? What are the uses of Internet in our daily life?

Ans Internet:- It is a global computer network providing a variety of information and communication facilities. It consists of inter-connected networks that use standardized communication protocols (TCP/IP).

WWW:- World wide Web is a collection of websites or webpages stored in web-servers and connected to local computers through Internet.

=> Uses of Internet:- Internet has become a crucial part of our life and backbone of modern technology.

1) Information Sharing.
2) Communication Path.
3) Research
4) Online Banking
5) Downloading stuffs from various web pages.
6) Cash Transactions and Booking and Orders, etc.

Qno13:- What is Internet Service Provider. Give an example of ISP in India.

Ans:- ISP is a company or organization that provides individuals and other organization access to the internet and other related services.

Some examples are BSNL, Bharti Airtel, Reliance Jio, Fibernet, etc. that operates in India.

Q:14:- Discuss differnce between MAC address, IP address and Port address?

Ans:- → MAC address stands for Media Access Control Address. It is assigned to the network interface card by the manufacturer and is used for communication within local area network.

→ An IP address is used for communication within local area network and for communication between networks on internet.

→ Port address is part of addressing information used to identify senders and receivers of messages in computer networking.

Q:15:- How do we view my Internet Browser's history?

Ans 1) Open the browser
2) On the top-right corner, click ⋮ (3-dots)
3) A dropdown menu appears which shows 'History'.
4) Click on 'History', to view browsing history.