DATA COMMUNICATIONS

1) What are the different types of networks?

* LAN (Local Area Network)
* PAN (Personal Area Network)
* MAN (Metropolitan Area Network)
* WAN (Wide Area Network)

2) Explain the shielded twisted pair (STP) and Unshielded twisted pair (UTP)?

* Shielded twisted pair (STP) is a special kind of copper telephone and local area network (LAN) wiring used in some business installations. Its adds an outer covering or sheild that functions as ground to ordinary twisted pair wiring. 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 wires.

3) What is the difference between baseband and broadband transmission?

Baseband Transmission	Broadband Trasmission
In base band trasmission, the type of signalling used is digital.	In broadband trasmission, the types of signalling used is analog.

2) Baseband transmission is bidirectional in nature	Broadband Transmission is unidirectional in nature.
3) Signals can only travel over short distances	Signals can be travelled over long distances without being attenuated.
4) It works well with bus topology.	It is used with a bus as well as tree topology.
5) In baseband transmission, Manchester and differential Manchester encoding are used.	Only PSK encoding is used

4) 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.

5) What is the difference between a hub, modem, router and a switch?

Routers :- Are responsible for sending data from one network to another work at layer 3 (Network) of the OSI model, which deals with IP addresses. Typically, routers today will perform functionally of both a router and switch - that is, the router will have multiple ethernet ports that devices can plug into.

Switches :-

They use the MAC address of a device to send data only to the port the destination device is plugged into. Work at layer 2 (Data link) of the OSI model, which deals with MAC addresses.

Hubs :-

Unlike switches, hubs broadcast data to all ports, which is inefficient, so hubs are basically a multiport repeaters.

6) When troubleshooting computer network problems, what common hardware-related problems can occur?

A large percentage of a network is made up hardware. Problems in these areas can range form malfunctioning hard drives, broken NICs, and even hardware startups.

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

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

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 overtime.

q) Discuss TCP/IP model in detail.

TCP/IP Reference Model is a four-layered suite of communication protocols. It was developed by the DoD (Department of Defence) in the 1960s. It is named after the two main protocols that are used in the model, namely, TCP and IP. TCP stands for Transmission Control Protocol and IP stands for Internet Protocol.

Four layers in the TCP/IP protocol suite are-

* Host-to Network Layer - It is the lowest layer that is concerned with the physical transmission of data. TCP/IP does not specifically define any protocol here but supports all the standard protocols.
* Internet Layer - It defines the protocols for logical transmission of data over the network. The main protocol in this layer is Internet Protocol and it is supported by the protocols ICMP, IGMP, RARP, and ARP.
* Transport Layer - It is responsible for error-free end-to-end delivery of data. The protocols defined here are Transmission Control Protocol (TCP) and User Datagram (UDP)
* Application Layer - This is the topmost layer and defines the interface of host programs with the transport layer services. This layer includes all high-level protocols like Telnet, DNS, HTTP, FTP, SMTP, etc.

10) What is the web browser (Browser)? Give some example of browsers.

A web browser, or simply 'browser', is an application used to access and view websites. Common web browsers include Microsoft Edge, Internet explorer, Google chrome, Mozila Firefox, and Apple Safari.

11) What is a search engine? Give example.

A search engine is a web-based tool that enables users to locate information on the World Wide Web. Popular examples of search engines are Google, Yahoo!, and MSN Search.

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

Internet is the global network of networks. WWW stands for World Wide Web. Internet is a means of connecting a computer to any other computer anywhere in the world. World Wide Web which is a collection of information which is accessed via the Internet.

13) What is an Internet service Provider? Give some example of ISP in india.

An Internet Service Provider (ISP) is a company such as AT&T, Verizon, Comcast, or Spectrum that provides Internet access to companies, families, and even mobile users. ISPs use fiber-optics, Satelite,

copper wire, and other forms to provide Internet access to its customers.

14) Discuss the difference between MAC address, IP address and Port address.

The main difference between MAC and IP address is that MAC Address is used to ensure the physical address of the computer. It uniquely identifies the devices on a network. While IP addresses are used to uniquely identifies the connection of the network with that device takes part in a network.

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

Open it by pressing Alt to show the menu bar, then choosing View → Sidebar → History. Or, you can use the keyboard shortcut, Ctrl+H. You can also view your history if you click the hamburger menu button in the top right-hand corner of your window, then click History.