ASSIGNMENT – DATA COMMUNICATION

ANSWER:1 A computer network can be divided into the following types, based on the geographical area that they cover, they are:

LAN(Local Area Network)

MAN(Metropolitan Area Network)

WAN(Wide Area Network).

ANSWER:2 Unshielded twisted pair) and STP (Shielded twisted pair) are the types of twisted pair cables which act as a transmission medium and imparts reliable connectivity of electronic equipment. Although the design and manufacture are different but both serve the same purpose.

ANSWER:3 The baseband and broadband transmissions are the types of signalling. Baseband transmission uses digital signalling and involves digital signal or electrical impulse that can be carried in a physical media such as wires. The broadband transmission uses analog signalling which involves optical signals or signals in the form of an electromagnetic wave. Baseband transmission utilizes the whole bandwidth of the channel to transmit a signal whereas in broadband transmission the bandwidth is divided into variable frequency ranges to transmit the different signals at the same instant.

ANSWER:4 THE MAIN DIFFERENCE BETWEEN A HUB , MODEM , ROUTER AND A SWITCH ARE :

Modem:	Stands for "modulating-demodulating": modems are hardware devices that allow a computer or another device, such as a or switch, to connect to the Internet. They convert or "modulate" an analog signa telephone or cable wire to digital data (1s and 0s) that a computer can recognize.

	Simply send traffic from point A to piont B without further manipulation.
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 the functionality of both a router and a switc 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 destinatio 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 a multiport repeaters.

ANSWER: 5 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 replace by another one .

ANSWER:6 The most common hardware problem that occur are :

1:BLANK MONITORS , 2 MOUSE PROBLEMS , 3 POWER CORD PROBLEM , 4 MOTHERBOARD PROBLEM ETC ..

eliminate the dust that has collected around the optical sensor.

ANSWER : 7 An anti-virus program must be installed on all servers and workstations to ensure protection.

That's because individual users can access any workstation and introduce a computer virus when plugging in their removable hard drives or flash drives.

ANSWER : 8

Static **and** dynamic IP **addresses follow the same pattern -- static refers to unchanging, and** dynamic **refers to changing. This means that the numbers associated with a** static IP **address do not change, while the numbers associated with a** dynamic IP **address do change**

BASIS FOR COMPARISON	STATIC IP ADDRESS	DYNAMIC IP ADDRESS
Provided by	ISP (For external IP address)	DHCP
Change acquirement	Once static IP is assigned, it doesn't change.	Dynamic IP changes each time when a user connects to a network.
Security	Risk is high.	More secure than static IP address.
Device tracking	Trackable	Untraceable

ANSWER : 9 The TCP/IP reference model is a layered model developed by the Defense Project Research Agency(ARPA or DARPA) of the United States as a part of their research project in 1960. Initially, it was developed to be used by defense only. But later on, it got widely accepted. The main purpose of this model is to connect two remote machines for the exchange of information. These machines can be operating in different networks or have different architecture.

The key features of the TCP/IP model are as follows:

1. **Supports flexible architecture:** We can connect two devices with totally different architecture using the TCP/IP model.
2. **End-node verification:** The end-nodes(source and destination) can be verified, and connection can be made for the safe and successful transmission of data.
3. **Dynamic Routing:** The TCP/IP model facilitates the dynamic routing of the data packets through the shortest and safest path. Due to dynamic routing, the path taken by the data packet can not be predicted, and thus it improves data security.

ANSWER : 10 : A web browser is a software application for accessing information on the World Wide Web. When a user requests a particular website, the web browser retrieves the necessary content from a web server and then displays the resulting web page on the user's device. Some of the web browsers are

GOOGLE CHROME , APPLE SAFARI , MICROSOFT INTERNET EXPLORER AND EDGE ETC ETC ..

ANSWER : 11 Search Engine refers to a huge database of internet resourcesES such as web pages, newsgroups, programs, images etc. It helps to locate information on World Wide Web. User can search for any information by passing query in form of keywords or phrases . some of example are :

Google , bang , yahoo ETC .

Answer : 12 A global system of interconnected computers, using a standardised Internet Protocol suite for communication and sharing information is called the IThe World Wide Web, or just "the Web," as ordinary people call it, is **a subset of the Internet.** The Web consists of pages that can be accessed using a Web browser. The Internet is the actual network of networks where all the information resides.

USES OF INTERNET IN OUR DAILY LIFE:

- 1. Access to Information. One of the incredible uses that the internet offers us is the ease with which through its different search engines we can ...
- 2. Uses of internet in Communication.
- 3. Entertainment.
- 4. Online Shopping.
- 5. Uses of Internet in Education .
-

ANSWER : 13 The full form of **ISP** is **an Internet service provider.** It is called an organization or company that provides internet facilities to people and all the big and small organizations whether we are at the home, office, or traveling. Every time we connect to the Internet, our device connects to the Internet through an ISP . THE EXAMPLES ARE AIRTEL INDIA , JIO AND BSNL ETC ETC .

- ANSWER : 14 THE MAIN DIFFERENCE ARE GIVEN AS

• It provides a secure way to find senders or receivers in the network. •	• An IP address is assigned to every device on a network so that the device can be located on that network. •	• . A port is a numerical value that is assigned to an application in an endpoint of communication.
• MAC address helps you to prevent unwanted network access	• It helps you to Identify a specific NIC in a computer on a network •	• A port number is part of the addressing information used to identify the senders and receivers of messages. •
• • MAC address is a unique number; hence it can be used to track the device. •	• IP address is one type of numerical label assigned to each device connected to a computer network that uses the IP for communication. •	• A port number is part of the addressing information used to identify the senders and receivers of messages. •
• Wi-Fi networks at the airport use the MAC address of a specific device to identify it. • •	• It acts as an identifier for a specific machine on a particular network. •	• The physical addresses change from hop to hop, but the logical and port addresses usually remain the same. •

	•	

ANSWER : 15 Open the Google Chrome Internet browser.
2 In the upper-right corner of the screen tap the icon.
3 In the drop-down menu that appears, select history and shown in the image.
4 The following page will contain your device's history.