ASSIGNMENT – 2

CCA 102

DATA COMMUNICATIONS

By

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Declaration

I Koneti Prasanthi **Registration no: CCA/2021/86101 (CSC id – 272443730011)** hereby declare that the assignment submitted on the entitled **"Data Communication"** is a bonfires work done by me.

Question : 01

Q. What are the different types of networks ?

Answer :-

Network :- A network consists of two or more computers that are linked in order to share resources such as printers and CD's, exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infarred light beams.

Types of Networks :- There are 3 different and commonly used networks. They are LAN, MAN, WAN.

1. Local Area Network (LAN)
2. Metropolitan Area Network (MAN)
3. Wide Area Network (WAN)
4. Wireless local area Network (WLAN)

1. LAN :- A local area Network (LAN) is a network that is confined to a relatively small area. It is generally limited to a geographic area such as a writing lab, school or building. As shown in figure 1 ie; [Fig:01]

Computers connected to a network are broadly categorized as servers or workstations. Servers are generally not used by humans directly, but rather run continuously to provide "services" to the other computers on the network. Services provided can include printing and faxing, software hosting, file storage and sharing, messaging, data storage and retrieval, complete access control for the networks, and many others.

2. MAN :- Metropolitan Area Networks are larger than Local Area Networks (LAN's) but smaller than wide Area Networks (WAN's) and incorporate elements from both types of networks. MAN's span an entire geographic area (typically a town or city, but sometimes a campus). Ownership and maintenance is handled by either a single person or company. Data sharing can be done by Cables, fiber optics etc. It has less security as compared to LAN. As shown in figure 2 i.e., [fig:02]

3. WAN :- A wide area network connects computers together across longer physical distances. This allows computers and low-voltage devices to be remotely connected to each other over one large network to communicate even when they are miles apart.

The INTERNET is the most basic example of a WAN, connecting all computers together around the world. Because of a WAN's vast reach, it is typically owned and maintained by multiple administrators or the public. This has less security as compared to both LANs and MANs. There is a need to have firewall. As on fig:03

4. WLAN :- IEEE has defined the specifications for a wireless local area network (WLAN), called IEEE 802.11, which covers the Physical and data link layers. A BSS (Basic service set) without AP (Access point) is called an adhoc network; a BSS with an AP is called an infrastructure network. As shown in figure 4 i.e., [fig:04]

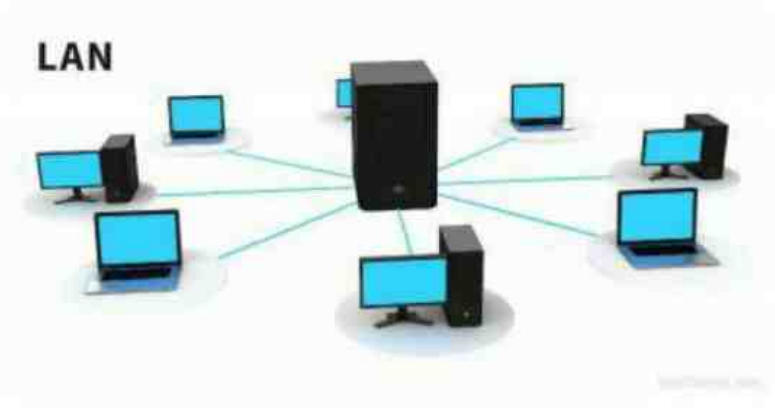


Fig: 01

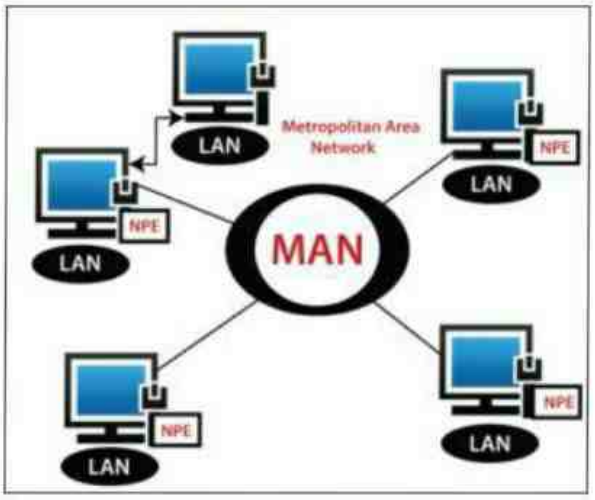


Fig: 02

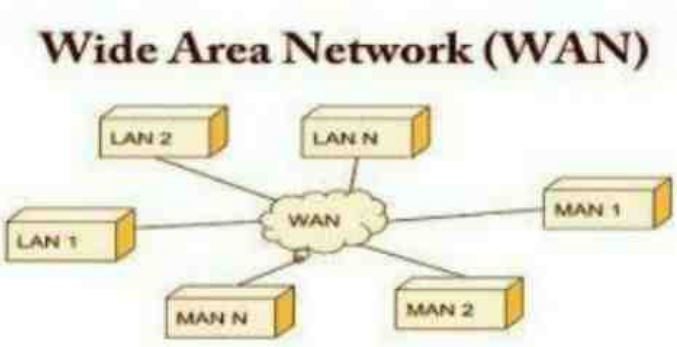


Fig: 03

Fig: 04

Question : 2

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

Answer :-

Shielded twisted Pair (STP) :- Shielded twisted pair (STP) cable was originally designed by IBM for token ring networks that include two individual wires covered with a foil shielding, which prevents electromagnetic interference, thereby transporting data faster.

STP is similar to unshielded twisted pair (UTP); however, it contains an extra foil wrapping or copper braid jacket to help shield the cable signals from interference. STP cables are costlier when compared to UTP, but has the advantage of being capable of supporting higher transmission rates across longer distances.

The additional covering in STP Cable stops electromagnetic interference from leaking out of or into the cable. STP cables are often used in Ethernet networks, practically fast - data - rate Ethernets. Some STP cablings make use of a thick copper braided shield which makes the cable thicker, heavier, and in turn much more difficult for installation as compared to the UTP cables. The other usual STP cables, often called foil twisted - pair cables or Screened twisted - pair cables, make use of just a thinner outer foil shield. As shown in figure 01 [i.e., Fig: 01]

Unshielded twisted pair :- Unshielded twisted pair (UTP) Cables are widely used in the computer and telecommunications industry as Ethernet cables and telephones wires. In an UTP cable, conductors which form a single circuit are twisted around each other in order to cancel out electromagnetic interference (EMI)

from external sources. Unshielded means no additional shielded like meshes or aluminium foil, which add bulk, are used.

UTP cables are often groups of twisted pairs grouped together with color coded insulators, the number of which depends on the purpose. An UTP cable is made up of a bundle of twisted pairs. The twisted pair are small 22- or 24- American wire Gauge (AWG) sized wires twisted around each other.

The wires are typically made of copper with polyethylene (PE) or FEP insulation which is color coded depending on the application of the cable being made. They are typically used in computer networking such as Ethernet for short-to-medium distances because of their relatively cheap price compared to optical fiber and coaxial cables. As shown in the diagram figure 02 [i.e., Fig:02]


Outer Jacket
Foil Shielded Twisted Pairs
Overall Foil Shield
Drain Wire
©OmniSecu.com

Fig: 01

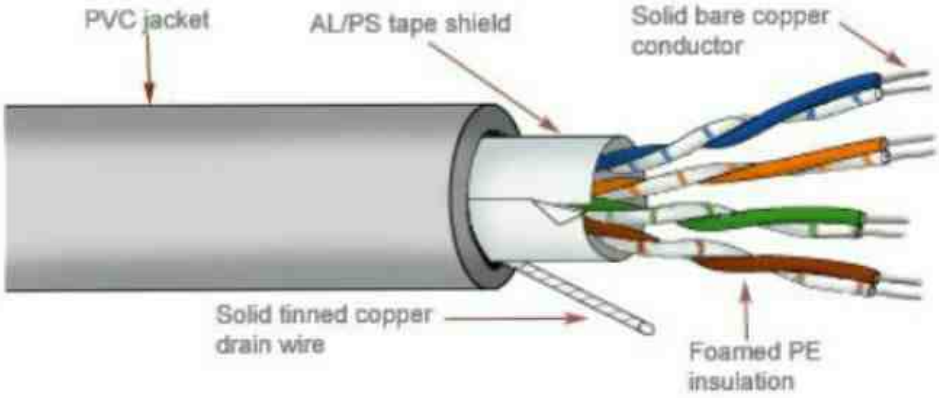

PVC jacket
AL/PS tape shield
Solid bare copper conductor
Solid tinned copper drain wire
Foamed PE insulation

Fig: 02

Question: 3

Q. What is difference between baseband and broadband transmission?

Answer:-

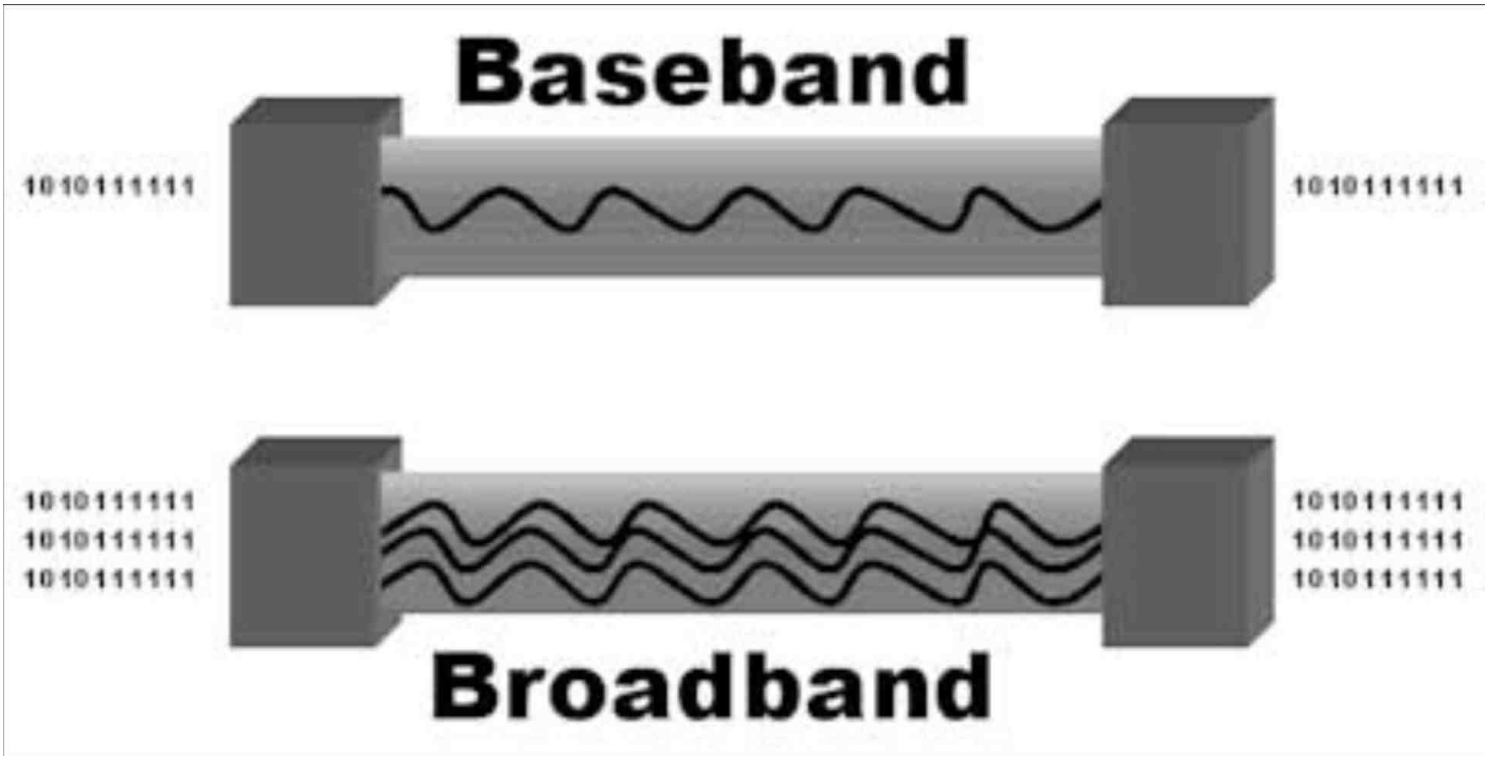
Baseband Transmission:- Baseband transmission is a transmission of the encoded signal using its own baseband frequencies i.e., without any shift to higher frequency ranges. It is used for short distances.

Broad band Transmission:- Broadband transmission is a signaling technology that sends signals simultaneously over a range of different frequencies as electromagnetic waves. The bandwidth of a broadband system can usually carry multiple simultaneous data signals.

Difference between baseband and broadband transmission:-

The differences between baseband and broadband transmissions are shown as below.

S.NO	Base band Transmission	Broadband transmission
1.	In baseband transmission the type of signalling used is digital	In broadband transmission, the type 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.
6.	The diagramatic representation is shown in figure 01 as i.e., Fig: 01	The diagramatic representation is shown in figure 01 as i.e., Fig: 01


Baseband
10101111111
10101111111
Broadband
10101111111
10101111111
10101111111
10101111111
10101111111
10101111111

Question : 4

Q. What is the difference between a hub, modem, router and a switch?

Answer:-

Hub :- A hub is a device that allows several network devices to connect together to exchange data on a single network. However, they have no management component. Network hubs are also known as "Repeaters." shown in figure 01 [fig:01]

Modem :- A modem is short for a modulator - demodulator its function is to facilitate the transmission of data, by converting an analogue signal to code and decoding digital information. Modems provide a connection between the Internet Service provider (ISP) and your Network. As shown in figure 02 [i.e., fig:02]

Router :- A network router directs the data packets along networks. A router has a minimum of 2 networks usually LAN's or WAN's or a LAN and its ISP. It cannot work single standing, is able to connect to multiple nodes. As shown in figure 03 [i.e., fig:03]

Switch :- A network switch's primary function is to connect network segments on a single network. Therefore is quite different from a router and modem ; it is used to expand to the capability of the router, by providing additional ports. A switch can be used connect multiple network devices. As shown in figure 04 [i.e., fig: 04]

Difference between A hub, modem, router and Switch :-

Device	Hub	Modem	Router	Switch
Use	Connects a network of personal computers together so they can be joined through a central hub.	Modems, like routers connect home PC's to the internet	Joins multiple area networks (LAN & WAN) Serving as "middle man" or intermediate distinations for network traffic using the IP they forward data to specific destination.	Joins several computers together within one local area network. They cannot join multiple networks and are incapable of sharing an internet connection.
Network	LAN	-	LAN & WAN	LAN

Function	1. Broadcasts data, does not select where the data goes, but rather sends it to every destination 2. Connects to multiple ethernet devices, making them act as a single segment	1. Codes and decodes data so that it can pass between home network and internet service provider (ISP). 2. Modem brings in the information while the router distributes it to the devices	1. Creates a home network, where all home computers are connected equally to the router, where there is no hierarchy in performance. 2. Protects from viruses sends to a specific destination.	1. A home network with a switch must designate one computer as the gateway to the internet. Connects multiple within on LAN. 2. Connects to various network segments.
Sophisti-cation Level	Low	High	High	Medium.

Fig: 01

Fig: 02

Fig: 03

Fig: 04

Question:5

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

Answer:- Yes, the MAC address gets transferred as well when you move the NIC cards from one PC to another PC,

It is because MAC address 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.

Question:6

Q. When troubleshooting computer network problems, what common hardware-related problems can occur?

Answer:- A large Percentage of a network is made up of hardware.. Problems in these areas can range from malfunctioning hard drives, broken NICs, and even hardware startups. Incorrect hardware configuration is also one of those culprits to look into.

Question: 7

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

Answer:- The best solution is to install anti-virus on all the computers in the network. This will protect each device from the other in case some malicious user tries to insert a virus into the servers or legitimate users.

Question: 8

Q. Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.

Answer:-

Static IP:- An Internet protocol (IP) address is a unique number assigned to each computer on a network. A computer on the internet can have a static IP address, which means it stays the same overtime, or a just as a street address determines where a letter should be delivered, an IP address identifies computers on the Internet.

Dynamic IP :- A dynamic IP address is an IP address that an ISP lets you use temporarily. If a dynamic address is not in use, it can be automatically assigned to a different device. Dynamic IP addresses are assigned using either DHCP or PPPOE.

Differences between IPV4 and IPV6 :-

S.No	IPV4	IPV6
1.	IPV4 has 32-bit address length.	IPV6 has a 128-bit address length.
2.	It supports Manual and DHCP address configuration.	It supports Auto and renumbering address configuration.
3.	In IPV4 end to end, connection integrity is unachievable.	In IPV6 end to end, connection integrity is achievable.
4.	The security feature is dependent on application.	IPSEC is an inbuilt security feature in the IPV6 protocol.
5.	Address representation of IPV4 is in decimal.	Address Representation of IPV6 is in hexadecimal.
6.	IPV4 has a header of 20-60 bytes.	IPV6 has header of 40 bytes fixed.

7.	Fragmentation performed by Sender and forwarding routers	In IPv6 fragmentation. Performed only by the Sender.
8.	In IPv4 packet flow identification is not available	In IPv6 packet flow identification are available and uses the flow label field in the header.
9.	In IPv4 checksum field is available.	In IPv6 checksum field is not available.
10.	It has broadcast Message transmission scheme	In IPv6 multicast and anycast message transmission scheme is available.

Question: 9

Q. Discuss TCP/IP model in detail.

Answer:-

TCP/IP model:- TCP stands for Trasmission Control Protocol and IP stands for Internet Protocol. TCP/IP reference model is a four-layered suite of communication protocols. It was developed by the DOD (Departments of Defense) in 1960's. It is named after the two main protocols that are used in the model, namely, TCP and IP. TCP contains of 4 layers. Suite are.

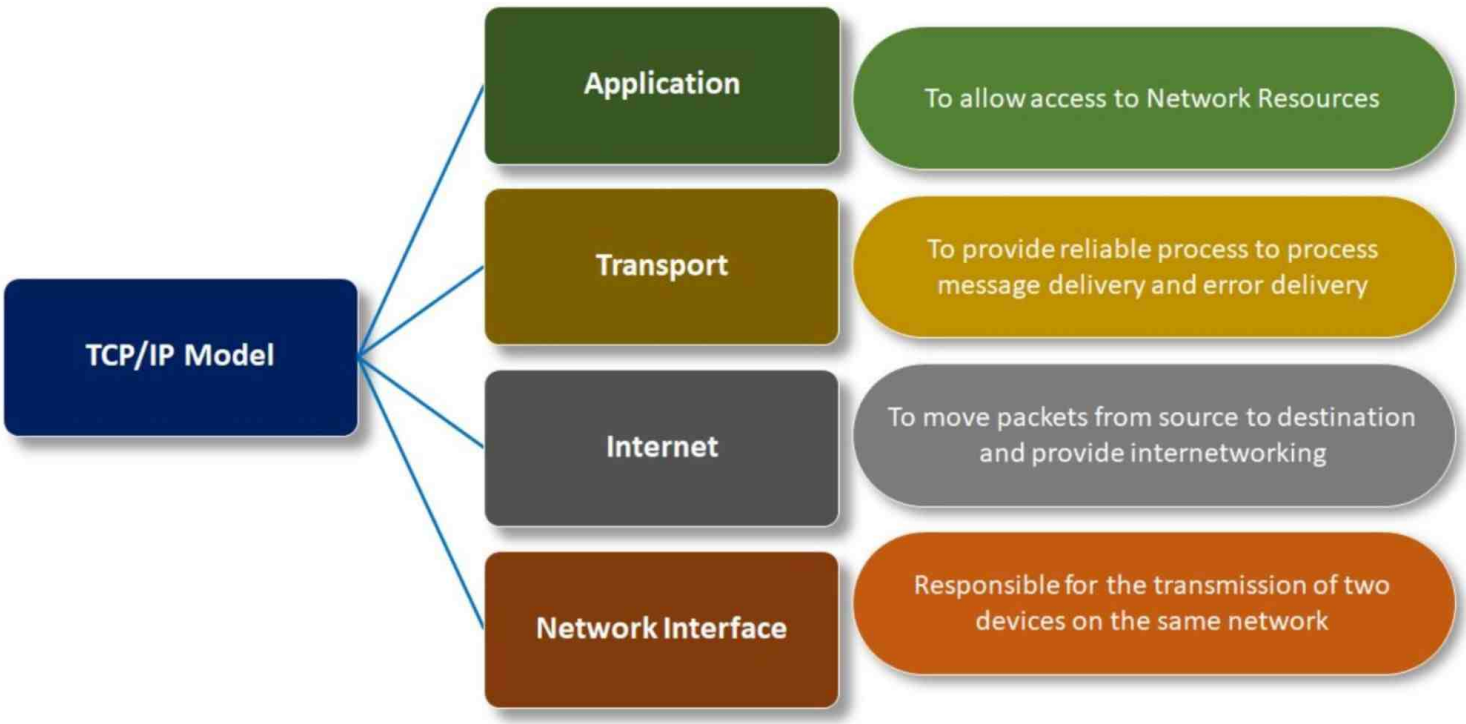
1. Host-to-Network layer.
2. Internet layer
3. Transport layer
4. Application layer.

1. **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.

2. Internet Layer :- It defines the protocols for logical transmission of data over the network. The main protocol in this layer is Internet protocol (IP) and it is supported by the protocols ICMP, IGMP, RARP, and ARP.

3. 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 Data Protocol (UDP)

4. 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 --.


TCP/IP Model
Application
To allow access to Network Resources
Transport
To provide reliable process to process message delivery and error delivery
Internet
To move packets from source to destination and provide internetworking
Network Interface
Responsible for the transmission of two devices on the same network

Question: 10

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

Answers :-

Web Browser :- A web browser, or browser for short, is a computer software application that enables a person to locate, retrieve and display content such as webpages, images, video, as well as other files on the world wide web.

Browsers work because every web page, image and video on the web has its own unique uniform Resource locator (URL), allowing the browser to identify the resource and retrive it from the web server. Icon is shown in figure 01

Some examples of browsers are as follows.

1. Google chrome
2. Apple Safari
3. Microsoft Internet Explorer and Edge.
4. Mozilla firefox.
5. Opera.

1. Google Chrome :- Chrome, created by internet gaint google, is the most popular browser in the USA, perceived by its computer and smartphone users as fast, secure, and reliable. There are also many options for customization in the shape of useful extensions and apps that can be downloaded for free from the chrome store. Chrome also allow easy integration with other google services, such as Gmail. Due to the success of "chrome" brand name, Google has now extended it to other products for example, Chromebook, Chromebox, chromecast and chrome OS. Its the Icon is shown in fig: 02

2. Apple Safari :- Safari is the default on Apple computers and phones, as well as other Apple devices its generally considered to be an efficient browser, its sleek design is keeping with the ethos of Apple. Originally developed for Macs, Safari has became a significant force in the mobile market due to the domination of Iphones and ipads. Safari is exclusive to apple, it doesn't run on Android devices, and the windows version of Safari is no longer supported. Its icon is shown in figure 03 as i.e.) fig: 03

3. Microsoft Internet Explorer and Edge :- This one comes pre-installed on windows 10 devices. This was developed to replace internet explorer and thus acts as a default browser. It is gaining popularity because of its new rendering feature, easy-to-use UI, freestyle writing over webpage displays and much more. As soon is shown in figure as 04 i.e., fig:04

4. Mozilla Firefox :- This one is another popular choice among users. Although people have always prefered this one as an option due to its speed. It takes much more time than chrome or safari As soon is shown in figure 05 i.e., fig:05

5. Opera :- The opera is also one of the commonly used browsers. It has its own range of add-on extensions that you might need to check out. It also can be synced among multiple devices. So do not miss out one this one. As soon is shown in figure 06 i.e., fig:06.

* These are some of the examples of the web browsers. There are many more among all those there are very well known to every one.

Fig: 01

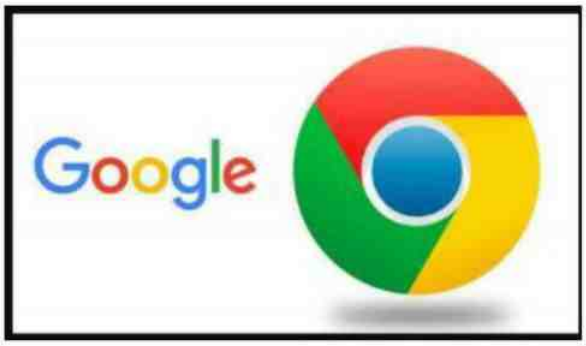


Fig: 02

Fig: 03

Fig: 04

Fig: 05

Fig: 06

Question: 11

Q. What is Search engine ? Give Example.

Answer:-

Search Engine:- Also known as a web search engine and an internet search engine, a search engine is a (usually web-based) computer program that collects and organizes content from all over the internet. The user enters a query composed of keywords or phrases, and the search engine responds by providing a list of results that best match the user's query. The results can take the form of links to websites, images, videos, or other online data.

Examples of Search Engines:- We have a list of top 10 search engines. These search engines are put in the sequence according to their rank in popularity and usage.

1. Google
2. Bing
3. Yahoo
4. Baidu
5. Duck Duck Go
6. Yandex
7. Ask.com
8. Slooia
9. Aol
10. Internet Archive.

1. Google :- Google takes first place in search engines. Around 92.16% of searches are happening on google, demanding in the market. Google offers easy to use interface to the users; that is why it is the most popular search engine. As shown in figure 01 i.e, fig:01

2. Bing :- Bing is the microsoft product which is known as Microsoft Bing. Bing has now renamed to Micro-soft Bing in October 2020. Around 2.18% of searches are happening on Microsoft Bing. As shown in figure 02 i.e., fig:02

3. Yahoo :- Before Google entered the market, Yahoo was the most popular search engine. In the united states, Yahoo is the default search engine for Mozilla Firefox since 2014 till now. As shown in figure 03 i.e, fig:03

4. Baidu :- Baidu is the most popular and most used search engine in china because its available in Chinese language. Apart from china, it is actively used in Hong-Kong, Taiwan, US and the Republic of Korea. Link is www.baidu.com as shown in fig:04

5. DuckDuckGO :- DuckDuckGo is a web search engine, which is available in multiple languages.

DuckDuckGo is also abbreviated as DDG. DuckDuckGo doesn't store the user's personal information. As shown in figure 05 i.e., fig.05

6. Yandex :- The term Yandex stands for the "Yet Another Index" after adopting in 1993. In 1997 Yandex.ru domain launched for Yandex. It offers an interactive interface. so that the user can use it easily. As shown figure 06 as i.e., fig :06

7. Ask.com :- Ask is a web search engine, which was formerly known as Ask Jeeves initially, but now it is redirected to ask.com. Ask Jeeves is disappeared since Feb 2006. You can access this search engine using the www.ask.com link As shown in figure 07 as i.e., fig : 07

8. Ecosia :- Ecosia is a Search Engine, which is a Berlin-based social business founded in 2009. The meaning of Ecosia - the search engine that plants trees. You can access this search engine using the www.ecosia.com link. As shown in figure 08 i.e., fig : 08

9. AOL :- AOL stands for America Online. In 1985, it was first come into existence. AOL had its own search engine called "Netfind". In 1999, Netfind

was renamed to AOL search. Currently, it ranks lower, but it still falls in the top 10 search engine lists. As shown in figure 09 i.e.) fig: 09

10. Internet Archive :- Internet Archive search engine is basically an American digital library whose main objective is to "Universal access to all knowledge". The official website of Internet Archive search engine is archive.org, and you can access this search engine using the https://archive.org/search.php. link. As shown as in the figure 10 as i.e., fig: 10

Fig: 01

Fig: 02

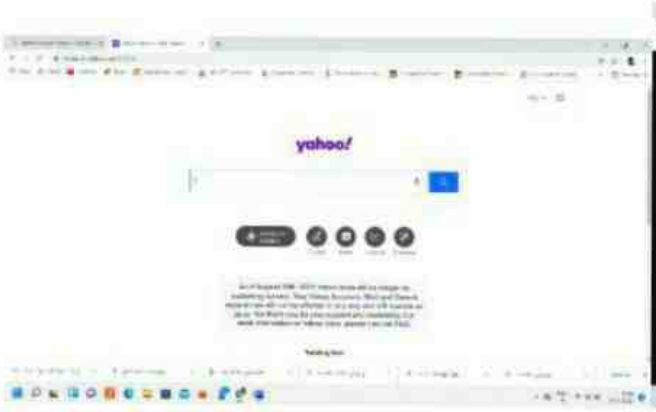


Fig: 03

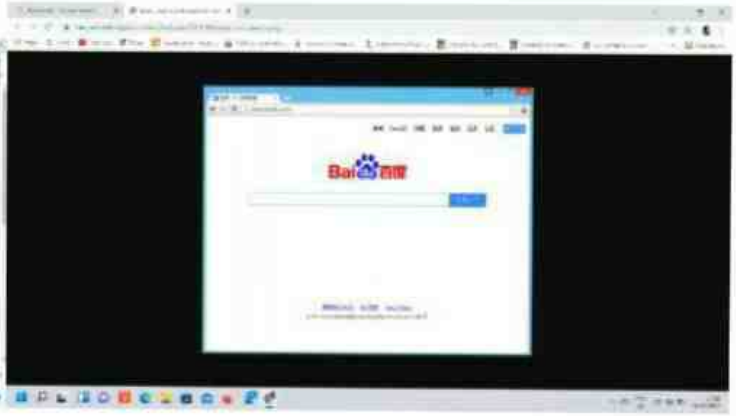


Fig: 04

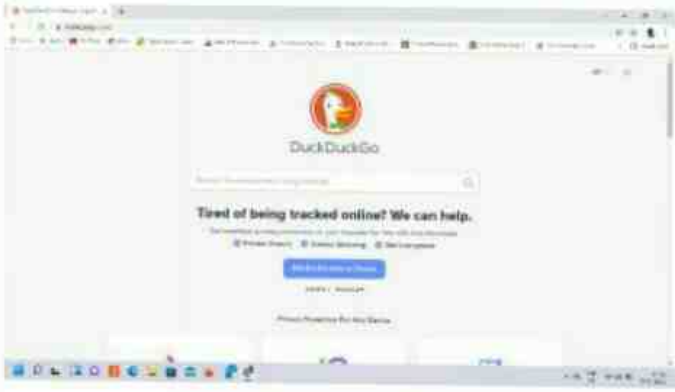


Fig: 05

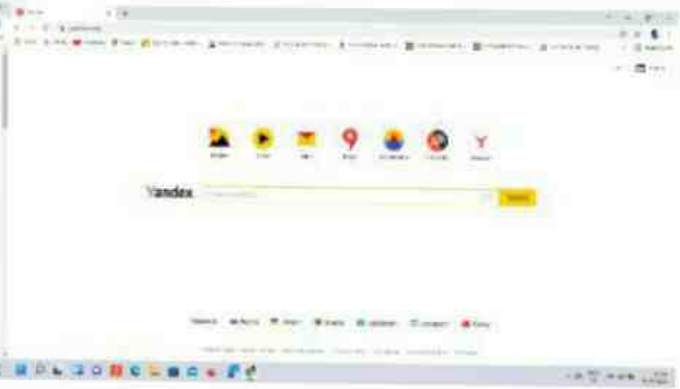


Fig: 06

Fig: 07

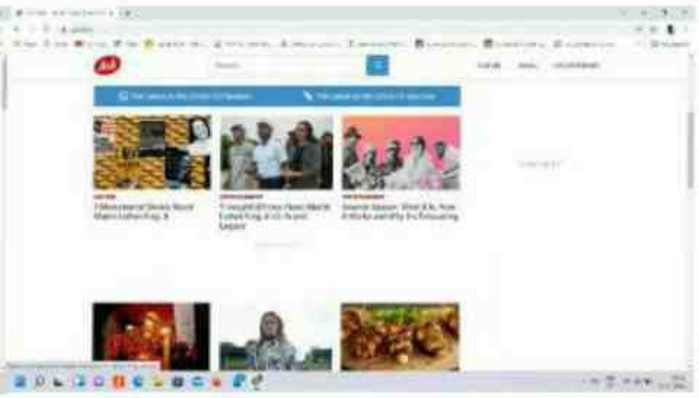


Fig: 08

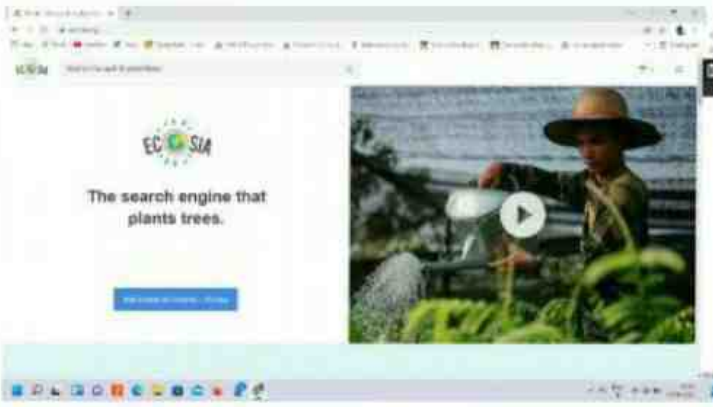


Fig: 09

Fig: 10

Question: 12

Q. What is an Internet & www? What are the uses of it in our daily life?

Answer:-

Internet:- The internet is a global network of billions of computers and other electronic devices. With the internet, its possible to access almost any information, communicate with anyone else in the world, and do much more.

You can do all of this by connecting a computer to the internet, which is also called "going online". When some one says a computer is online, it's just another way of saying its connected to the internet.

WWW:- The extraction of www is world + wide-web. The world-wide-web usually called the web for short - is a collection of different websites you can access through the Internet. A website is made up of related text, images and other resources.

Once you are connected to the internet, you can access and view websites using a type of application called "web browser". Web browser itself is not internet; it only displays websites stored on the internet

Uses of Internet in our daily life :-

The uses of the Internet in our daily life is depending on desires and goals. Activities in our daily life are decided after the uses of the Internet. Internet invaded our daily life. we spend lots of time on the web. You can do Online courses and improves your writing, Communication, business, and Online marketing skills. Online shopping, Social media, Emails, chatting are common things that we do daily. The following points will help you learn why the Internet is important.

1. Internet is helping a student to learn by providing a free platform throughout their lifetime.
2. Internet helps everyone or anyone to learn anything from anywhere in the world.
3. Internet has made the human life ~~fast~~ by increasing the speed of daily tasks.
4. This helps the business person to their business promotions and innovations.
5. This Internet made shopping easy through the different websites using the internet connection from one place to other.

6. Internet has help from a very small business owners to a big universities everyone is getting the benefits of it for research and development.

7. Internet provide us quick and free communication. As we all are connected with each other on various computers and IP's. Skype, chat messengers, Social media is common for both personal & professional purposes.

8. International uses of the internet by working remotely and providing business services.

9. Helps in Money Management As we can see hundreds of websites, apps and other tools that help us in handling daily transactions, transfers, management, budget planning etc... and this trend is growing steadily.

10. Internet is a great tool for politicians to connect with people. It helps in everyday politics.

11. Internet is used for teaching and sharing knowledge with others.

12. Solving the problems of others by the use of Internet eg:- . People ask on Quora, and then people who know the solution answers.

13. Internet has made cashless Economy through online payments, Internet banking, E-Wallets etc --- and also helps at some point to decrease Corruption.

14. It can be used as the media for the environment development by promoting about the events on social media platforms.

15. Uses of the Internet on tour and travelling are highly effective. We now search on Google before visiting the places.

16. Government policies and schemes are easily accessible by the use of the Internet.

17. Today almost all things are connected and working through the internet and is becoming the engine for every new invention.

Question : 13

Q) What is an Internet Service provider? Give some example of ISP in India.

Answer :-

Internet Service provider :- (ISP)

The term Internet Service provider (ISP) refers to a company that provides access to the internet to both personal and business customers. ISPs make it possible for their customers to surf the web, shop online, conduct business, and connect with family and friends. all for a fee. ISPs may also provide other services. including email services, domain registration, web hosting, and browser packages. An ISP may also be reffered to as an information service provider, a storage service provider, an internet service provider (INSP), or any combination of these three based on the services the company offers.

Examples of Internet Service providers in India :-

1) Airtel India :- India's largest telecom service provider for clients and businesses. Buy postpaid broadband plans in india. Prepaid Online recharge and dth up to ...

2) Beam Fiber :- Beam Telecom Pvt. Ltd, known as Beam Fiber, is an ~~Act~~ ACT Group company that provides high speed broadband internet services throughout the city of Hyderabad.

3) Bharti Airtel :- Bharti Airtel is a leading and most trusted provider of ICT services in india and offers a diverse portfolio of services to enterprises, governments, carriers ...

4) Bharti Enterprises :- One of India's first generation corporations, with interests in telecom, Space, Insurance

5) BSNL Broadband Services :- BSNL Broadband Services - Choose the best Broadband plans, Broadband Internet plans, Fixed Broadband, CDMA Broadband, Wi-Max Broadband, Fibe Broadband, Dail-up.

6) DEN Networks :- It is the India's leading digital Cable TV. Service provider offering digital den, Cable den, digital Cable TV, Cable television Services.

7) Idea Cellular :- Idea Cellular is a company of the Aditya Birla group, India's first truly multinational corporation Idea is an integrated GSM operator across India Offering 2G and 3G.

8) JIO :- India's largest 4G Network offers the best prepaid and postpaid plans, jiofiber broadband plans and more.

9) Mahanagar Telephone Nigam Limited :- Mahanagar Telephone Nigam limited, d/b/a MTNL, is a wholly owned subsidary of Bharat Sanchar Nigam Limited based in New Delhi, India.

10) MTS M-Blaze :- MTS M Blaze is an EVDO (High speed Network Internet) based service provided by "MTS India". MTS launched the EVDO REV A based high speed mobile broadband service.

11) Sancharnet :- The telecommunications Department of the Ministry of communications is responsible for formulating development policies aimed at accelerating the growth of telecommunications services.

12) Siti Cable :- SITI Networks Ltd (formerly wire and wireless India limited (WWIL) is a multiple system operator (MSO) owned by Essel Group.

13) Spectranet :- Shyam spectra pvt. ltd., formerly known as Citycom Networks pvt. ltd. or spectra, is a Gurgaon based internet service provider offering fiber optic broadband services to residential, business in Delhi &

14) Spice Telecom :- Spice Digital ltd formerly registered as Cellebrum Technologies is an Indian Telecommunications company based in Noida, India as subsidiary of Spice Connect.

15) Tata Tele Services :- Tata tele Business Services limited (TTBSL) Formerly known as Tata tele services limited (TTSL), is an Indian broadband and telecommunications service provider based in Mumbai. It is a subsidiary of the Tata Group, an Indian Conglomerate.

16) Tikona Digital Networks :- Tikona Infinet Limited (TIL), known simply as Tikona, is a Indian Internet Service provided in Mumbai.

17) Telenor India :- Telenor Communications Pvt. Ltd., formerly known as Uninor, was a mobile network operator in India. The company was a wholly owned subsidiary of Norwegian telecommunications company telenor Group.

18) Vodafone India :- Vodafone India (formerly vodafone Essar ltd, Hutchison Essar ltd was the Indian subsidiary of vodafone Group plc, based in the United Kingdom, and was a telecommunications service provider in India.


MTNL


MBLAZE
MTS


SITI
NETWORKS


Spectranet
4G LTE


TATA
TATA TELESERVICES LIMITED
telenor


tikona
Digital Networks
vodafone
India

Question: 14

Q. Discuss the difference between MAC address, IP Address and Port address.

Answer:-

MAC address :- MAC address extraction is Media Access Control address. MAC address is a unique identifier that is assigned to a NIC (Network Interface Controller) It consists of a 48 bit or 64 bit address. Which is associated with the network adapter. MAC address can be in hexadecimal format. MAC address is generally in six sets of two-digits (characters) that are separated by colons.

IP Address :- An IP address is an address that helps you to identify a network connection. It is termed as the "Logical Address". Which is provided to a connection in a network. IP address helps you to control how devices on the Internet communicate and defines the behaviour of internet routers.

Port address :- Port Address is the logical address of each application or process that uses a network or internet to communicate. port address guides the data to reach to the correct server application

from your computer and come back to the correct application to your computer. As you may have opened lot of applications like google, facebook, yahoo etc -- Port number guides the data from your computer to go to the 3 different servers in this example like google, yahoo and facebook.

Difference between MAC address, IP address and Port address :-

S.No	MAC address	IP address	Port address
1.	Media access control address is used to ensure the Physical address of a computer	Internet protocol (IP) address is used to identify a host in network	Port address is used to identify an Process of Service on your system.
2.	MAC address operates in the data link layer.	IP address operates in the network layer	Port address is operates in the transport layer.
3.	MAC address has 48-bit address.	IPv4 has 32 bits address and IPv6 has 128-bits address	Port address has 16 bits number address.
4.	MAC address helps in simply identifying the device	IP address identifies the connection of the device on the Network	Port address are logical interfaces used by communication protocols.

5.	MAC address can't be found easily by a third party	IP address can be found by a third Party	Port address is a number that can be used to provided information by anyone.
6.	A device attached with MAC address can retrive by ARP Protocol	A device attached with IP address can retrieve by RARP protocol	Port numbers are logical interfaces used by communication protocols.
7.	No classes are used for MAC addressing	IPV4 uses A, B, C, D and E classes for IP addressing	The port address are divided into 3 ranges.

Question : 15

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

Answer :- As you browse the web, most web page data is cached locally on your computer to help pages load faster and reduces the amount of data you need to transfer over your Internet connection. To help keep your browsing history private, and to free up disk space on your computer, you can view and clear your local browsing history.

We can view the internet browser's history through the web browser platforms like.

1. Microsoft Edge
2. Google chrome
3. Mozilla Firefox
4. Opera
5. Safari.

1. Microsoft Edge :-

Microsoft Edge is the default browser in windows 10, replacing Internet Explorer on new computers.

To view your Edge browsing history :-

In a Microsoft Edge browser window, open

the history menu using the keyboard shortcut Ctrl+H. You can also access this menu with the following steps:

Step:1 Click the Hub button in the upper right-hand corner of the window.

Step:2 Click History icon to open the history menu.

This menu allows you to view the pages you have visited in chronological order.

2. Google Chrome:-

Google Chrome is most commonly used web browser by most of the users.

To view your browsing history in Chrome:-

Step:1 In any chrome window, use the keyboard shortcut ctrl+H, or navigate to the URL chrome://history.

Step:2 OR, Click the Menu button, which is located near the top-right side of the browser window, and choose History, then History again.

3. Mozilla Firefox :-

There are several ways to view and edit your history in firefox.

To view your browsing history in firefox :-

Step:1 If you do not have a custom homepage set, you can click the History button in any new browsing window.

Step:2 Or you can always view your browsing history in the History sidebar. Open it by pressing Alt to show the menubar, then choosing View → Sidebar → History. Or, you can use the Keyboard shortcut, Ctrl+H.

Step:3 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. This gives you a quick look at your history. From this menu you can also view History Sidebar.

Step:4 Lastly, you can open your browsing history in the firefox libraries. To open this view, Press Alt to show the menu bar, then choose History → Show all history. The keyboard short cut for this view is Ctrl+Shift+H before viewing your here.

4. Opera :- The Opera browser has a very straight forward interface for viewing and editing your history.

To View your browsing history in Opera :-

Step:1 In an opera browser window, click the Opera menu button in the upper left-hand corner of the window

Step:2 Choose History to open the history tab.

(Q)

Use the Keyboard Shortcut Ctrl+H.

5. Safari :- Safari is the default web browser on Apple's OSX and iOS operating systems. Although it was previously available for Microsoft windows, as of 2012 Apple no longer supports Safari on windows.

To View your browsing history in Safari :-

Step:1 Open the Safari browser.

Step:2 Click the History menu at the top of the screen. The menu lists recent pages from your browsing history, which you can navigate to by clicking on them. To edit your history or view it in detail, click Show all History.