ASSIGNMENT-II

CCA-102: DATA COMMUNICATION

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CCA-102: Data communications

① What are the different types of network?

* A network is a set of devices (often referred to as nodes) connected by communication links to share the computing resources.

* A node can be computer, Printer, Smart phone, refrigerator or any other device capable of sending and/or receiving data generated by other nodes on the network.

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

Shielded twisted pair (STP)

⇒ Shielded twisted pair is a special kind of copper telephon and local area network (LAN)

⇒ Wiring used in some business installation

⇒ It adds an outer covering or shield that functions as a ground to ordinary twisted pair wiring.

⇒ Twisted pair is the ordinary copper wire that connects many computer network.

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to the telephone company.

⇒ To reduce cross-talk or electromagnetic induction between pairs of wire, two insulated copper wire are twisted around each other.

⇒ Each signal on twisted pair requires both wires.

Unshielded Twisted pair cable (UTP)

⇒ Unshielded twisted pair cables are widely used in the computer and telecommunications industry as Ethernet cables and telephone 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 shielding like meshes or aluminum foil, which add bulk, are used.

⇒ UTP cables are often groups of twisted pairs grouped together with colour coded insulators, the number of which depends on the purpose.

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

BASE BAND	BROAD BAND
* It refers to a communications channel in which information is carried in digital form	The signals are modulated as radio frequency analog wave that use different frequency range.
* Communication is bi-directional which means the same channel is used to transmit and receive signals.	Communication is unidirectional meaning two different channels are needed in order to send and receive signals.
* Every device on a base band system shares the same channel.	Multiple independent channels can carry analog or digital information through FDM
* Baseband LANs are inexpensive and easier to install and maintain	Broadband systems are generally more expensive because of the additional hardware involves.

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* Baseband LANs have a limited distance reach which is no more than a couple miles.	Broadband LANs span much longer distances than baseband (up to tens of kilometers.

4. What is the differents between hub, modem, router and switch?

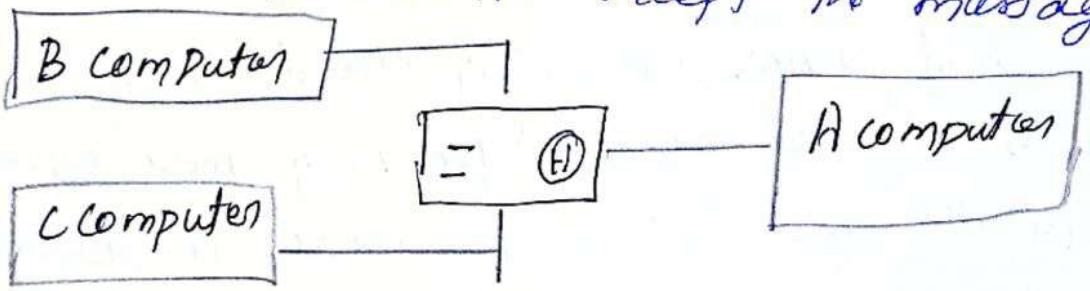
Hub:-

⇒ A hub is to send out a message from one port to other ports.

⇒ For Example there are three computers of A BC The message sent by a hub for computer A will also come to the other computers.

⇒ But only computer A will respond and the respons will also go out to every other port on the hub.

⇒ Therefore, all the computers can receive the message and computers themselves need to decide whether to accept the message.



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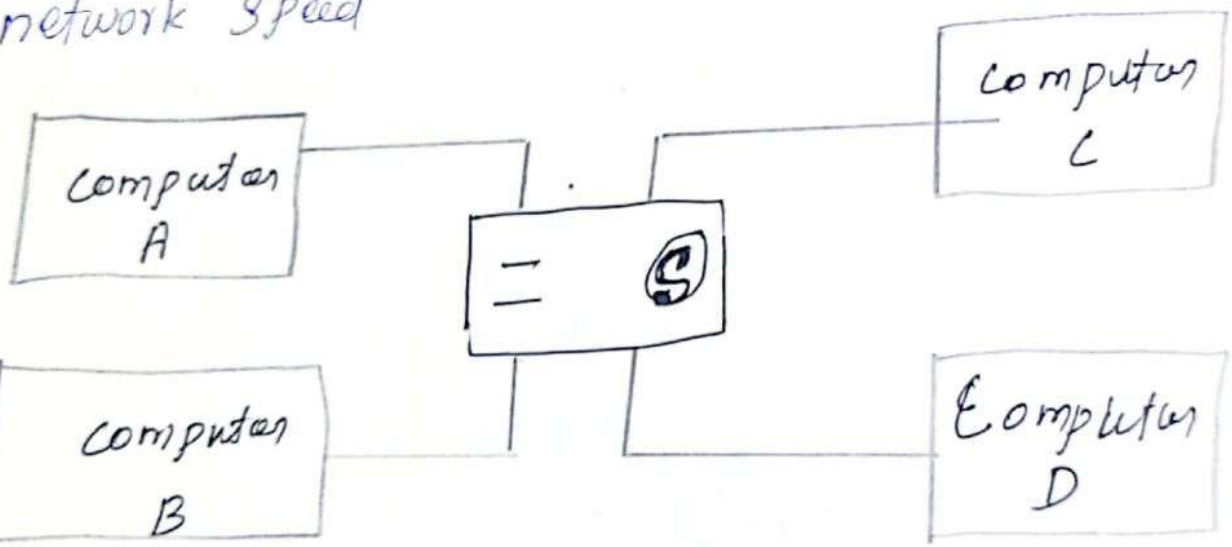
SWITCH:-

⇒ A switch is able to handle the data and knows the specific addresses to send the message.

⇒ It can decide which computer is the message intended for and send the message directly to the right computer.

⇒ The efficiency of switch has been greatly improved, thus providing a faster network speed



ROUTER:-

⇒ Router is actually a small computer that can be programmed to handle and route the network traffic.

⇒ It usually connects at least two networks together, such as two LANs two WANs or a LAN and its ISP network.

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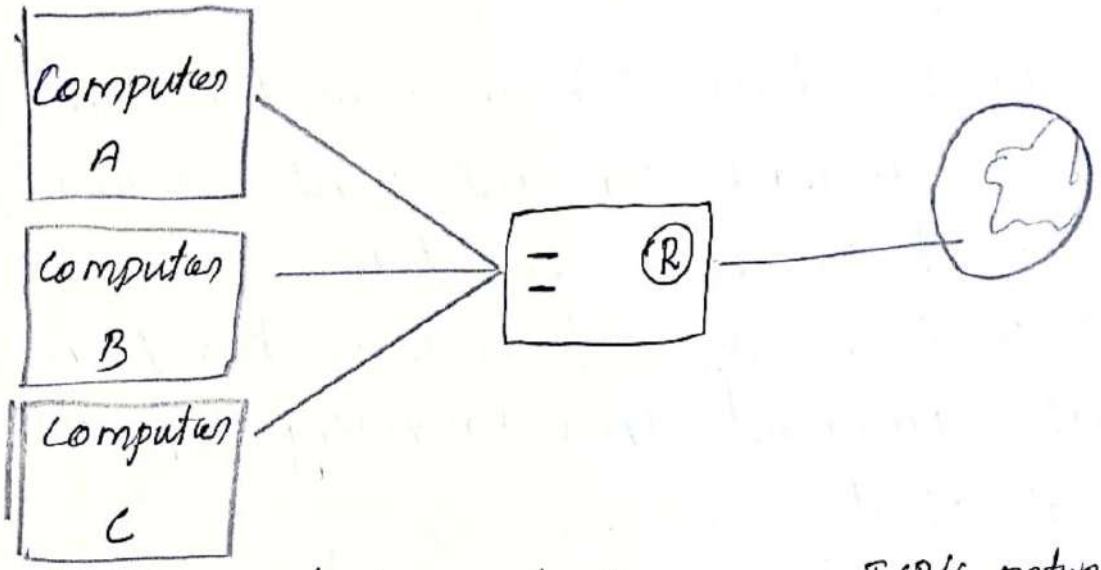
⇒ Routers can calculate the best route for sending data and communicate with each other by protocols.



private Home network ISP's network.

MODEM:

⇒ It is a computer hardware device that convert data from a digital into a format suitable for an analog such as telephone or radio.

⇒ A modem transmits data by modulating one or more carrier wave to encode digital information. while the receiver demodulates the signal to recreate the original information

⇒ The goal is to produce electrical signal that can be transmitted easily and decoding reliably.

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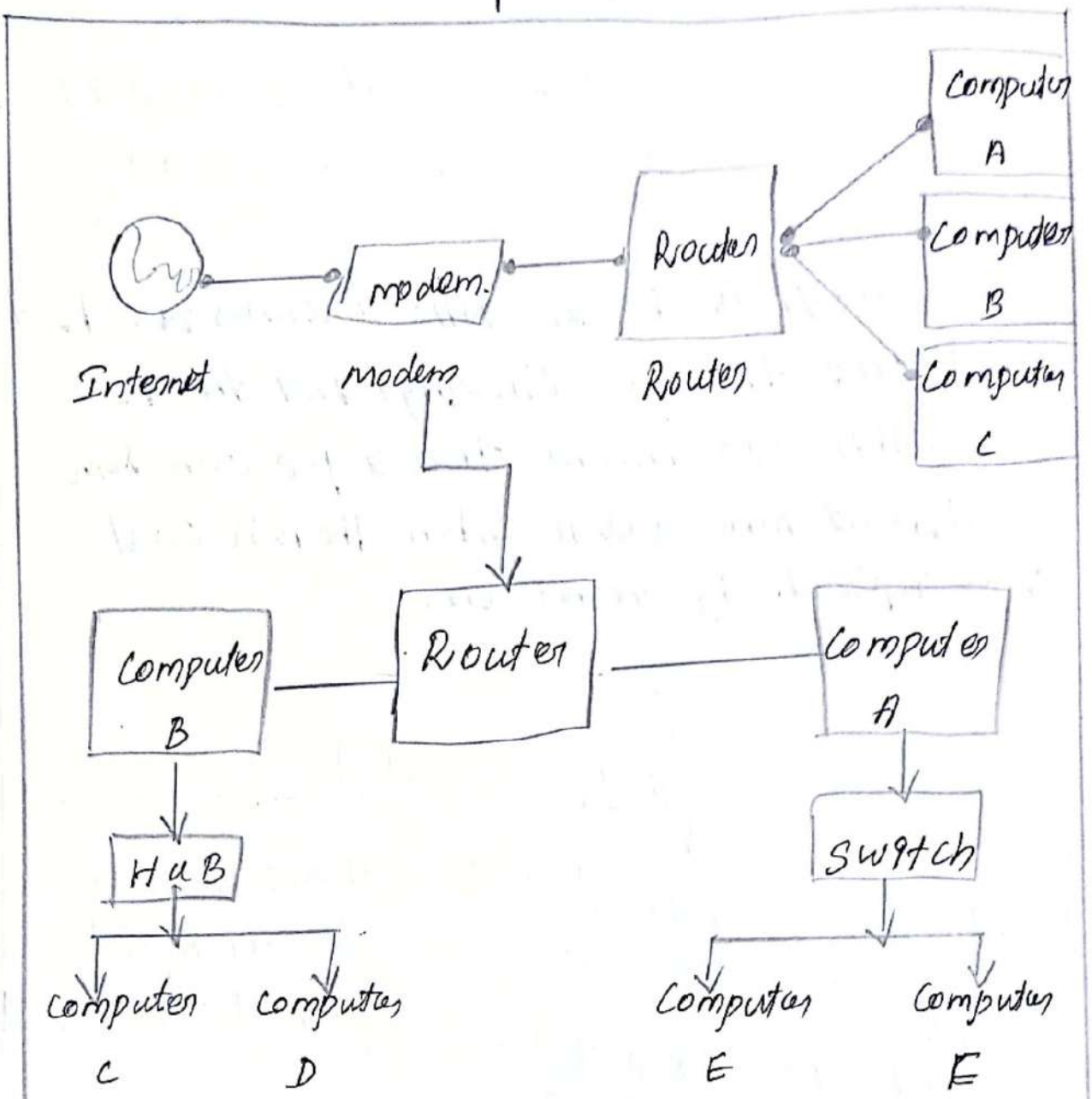

Different between modem, Router, Hub and switch.

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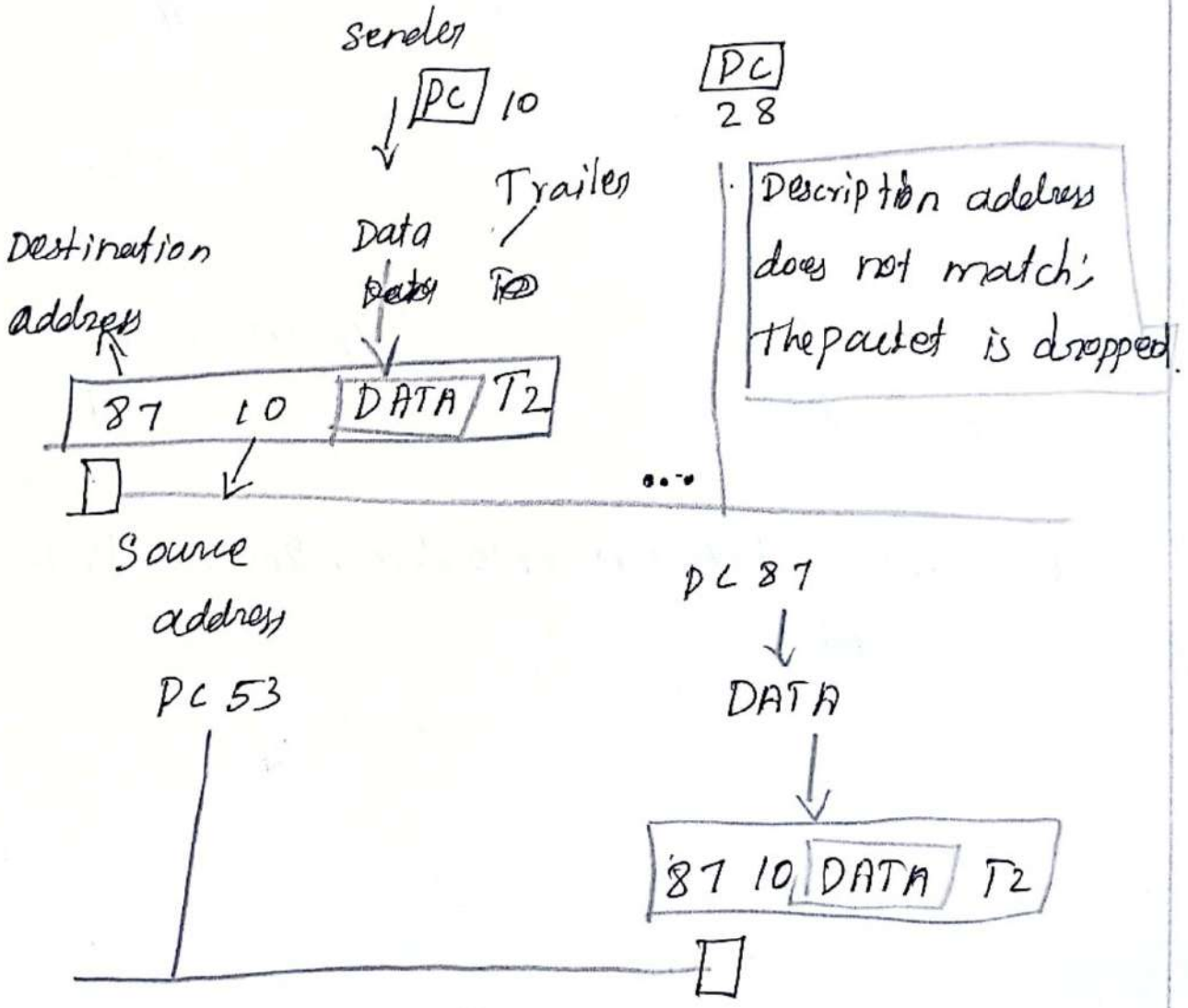
⑤ When you move the NIC card from one PC to another PC, does the MAC address get transferred as well?

=> Yes, that's because MAC addresses are hard wired on to the NIC circuitry, not the PC.

=> This also means that a pc can have a different MAC address when the NIC card was replaced by another one.



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

⇒ Free up RAM by closing other open programs

~~Reinstall the software~~

⇒ Every piece of software uses Random Access memory.

The more software running on the computer the more ram is uses. This can be easily problematic.

⇒ Software problems can stem from a conflict with other programs or simply from

⇒ Changes to software and hardware problem can sometimes causes software problem.

⇒ conflict with other software

⇒ Changes to computer settings.

⇒ Conflicts with new or improperly configured hardware.

⇒ Sometimes software problems occur because critical application files have been removed. updated or deleted.

⇒ Software vendors may also fix bugs issuing patches.

⇒ Viruses spyware can causes softwar fra

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Common Hardware problems:-

⇒ Key not working on keyboard
⇒ Laptop touchpad causing cursor to jump randomly
⇒ Display Screen image distortion
⇒ Video Card faults.
⇒ Fan noises.
⇒ Battary not charging / doesn't last long
⇒ Laptop Speaker making static noises.
⇒ Computer Screen Freezes
⇒ Computer Has insufficient memory
⇒ Operating System Is Missing
⇒ The Blue Screen Of Death.
⇒ Computer Turn on But Still Doesn't work.

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

The best place to install an Anti Virus Program In a network that is. twenty work station. because this work station have. Computers So That we put Antivirus in Work Station

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

Static IP:-

⇒ An Internet protocol (IP) address is a Unique number assigned to each computer on a network.

⇒ Just as a street address determines where a letter should be delivered, an IP address identifies computers on the internet.

⇒ If your computer is hosting a web server, its IP address is what identifies it to the rest of the internet.

⇒ A computer on the Internet can have a static IP address, which means it stays the same over time, or a dynamic IP address

⇒ When you sign up for goole fiber for small business, you can choose to have no static IPS, one staticIP or multiple static IPS.

⇒ The number of static IPS available is shown on the screen when you sign up for service.

⇒ Most Fiber customers do not need any Static IP address.

⇒ The vast majority of Internet features work without static IPs. Including web browsing. email sending and reciving

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Dynamic IP.

⇒ A dynamic IP address is an IP address that changes from time to time.

⇒ Most home networks are likely to have a dynamic IP address and the reason for this is because it is cost effective for internet service providers to allocate dynamic IP address to their customers.

⇒ An IP address is a number which computers use to identify a location on the network, whether the public Internet or a private network.

⇒ We know over IP address on the open DNS Dashboard in our current IP address displayed at the top of right of the page.

⇒ we can conduct over ISP and find out over IP is probably dynamic.

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Difference between IPV4 and IPV6

IPv4	IPv6
IPV4 has 32-bit address length	IPV6 has 128-bit address length
It supports Manual and DHCP address configuration	It support Auto and renumbering address configuration.
In IPV4 end to end, connection integrity is Unachievable	In IPV6 end to end connection integrity is Achievable.
It can generate 4.29x10^9 address Spae Address representation of	quite Large 3.4x10^38 address Spae. hexadecimal.
IPV4 is in deimal. Fragmentation performed by senders and forwarding rotens	performd only by the senders.
In IPV4 packet flow identification is not available	In IPV6 packet flow identification are Available and uses the flow Lable field in the header
IPV4 has header of 20-60 bytes	IPV6 has header of 40bytes Fixed

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9) Discuss web browser? Give some example for browser?

Web browser:-

A web browser is a software program that allow a used to locate, access, and display web page.

In common usage, a web browser is usually shortened to "browser"

web browser are used displaying and accessing website on the internet, as well as other content created using languages such as Hypertext Markup Language. and Extensible Markup Language.

Example

① Mozilla Firefox
② Google Chrome
③ Microsoft Internet Explorer.
④ Apple Safari
⑤ Opera browser

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(11) What is a search engine? Give example?

⇒ A search engine is software accessed on the Internet that searches a database of information according to the users query.

⇒ The engine provides a list of result that best match what the user is trying to find.

⇒ For users, a search is accessed through a browser on their computer smartphone, tablet, or another device.

⇒ The Search engine for a website is at the top or side of each page on a well designed website.

Example :-

① Google
② Bing
③ yahoo
④ Baidu
⑤ ALO
⑥ Ask.com
⑦ Excite
⑧ DuckDuckGo
⑨ wolfram Alpha
⑩ Yandex
⑪ Lycos
⑫ chacha.com

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12. What is internet and www? What are the uses of internet in our daily life?

Internet:-

⇒ The Internet is a global network of networks connecting millions of users worldwide via many computer networks using a simple standard common addressing system and basic communication protocol called TCP/IP.

⇒ This allows message sent over the Internet to be broken into small pieces, called packets, which travel over many different routes between source and distination computer.

⇒ Uses of Internet in our daily life?-

① Education
② for shopping
③ Research & development
④ Business Promotion and Innovation,
⑤ Communication
⑥ Digital Transactions
⑦ Money management
⑧ Tour & Travel.

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(13) What is an Internet Service provider? Give Some Example of Isp in India?

Internet Service Provider:-

⇒ The term Internet service provider refers to company that provides acces 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.

⇒ It provide other services including email service domain registration, web hosting and browser packages.

⇒ An ISP may also be referred to as an Information service provider, astorage provider, and Inter net services provider.

Example:-

① BSNL
② MTNL
③ Bharti Airtel
④ Hathway Cable
⑤ Data Communications
⑥ You telecom
⑦ Asianet Communications
⑧ sify Broadband
⑨ Asient Communications.
⑩ HFCL Infotel.

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(14) Difference between MAC address, IP address, and Port address?

MAC address	IP Address
MAC address is a 6 bytes hexadecimal address	IP address is 4 byte or 6 byte address.
ARP is used to get MAC address of device	RARP used to get IP of device.
NIC cards manufacturer provides the MAC address physical address of computer	network administrator or ISP provides IP address logical address of computer.
Operates in the data Link layer of OSI model.	Operates in the network layer of OSI model.
helps in simply identifying the device	identifies the connection of the device on the network.
Computer cannot changed with time and environment to it is fixed.	modify with the time and environment it is not fixed.
MAC Address cannot be found by third party	IP address can be found by third party.

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IP Address	Port Address.
A numerical label assigned to each device connected to a computer network that uses the Internet protocal for communication.	A numerical value that is assigned to an application i nan endpoint of communication.
used to identify a particular device in The network.	used to identify a particular process executing in The device.
Ip address helps to send information from a sender machine to a receiver machine	port number helps the os to direct the information to the correct application running on The receivers machine.
195.165.05 is an example of IP address	Example Port 25. reserved for SMTP.

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(15) How do we view my Internet browsers history.

⇒ Open a Microsoft Internet Explorer or Chrome or Google or opera or Mozilla Firefox browser window

⇒ Click History

Check the boxes next to the specific types of history you want to. use are clear.

⇒ When you want clear the data. Click clear button

⇒ when you want to see that click. on that Specific item then open it.

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