Serial No. _____ R.P. Dated _____

Today

Practical Note Book Sheets

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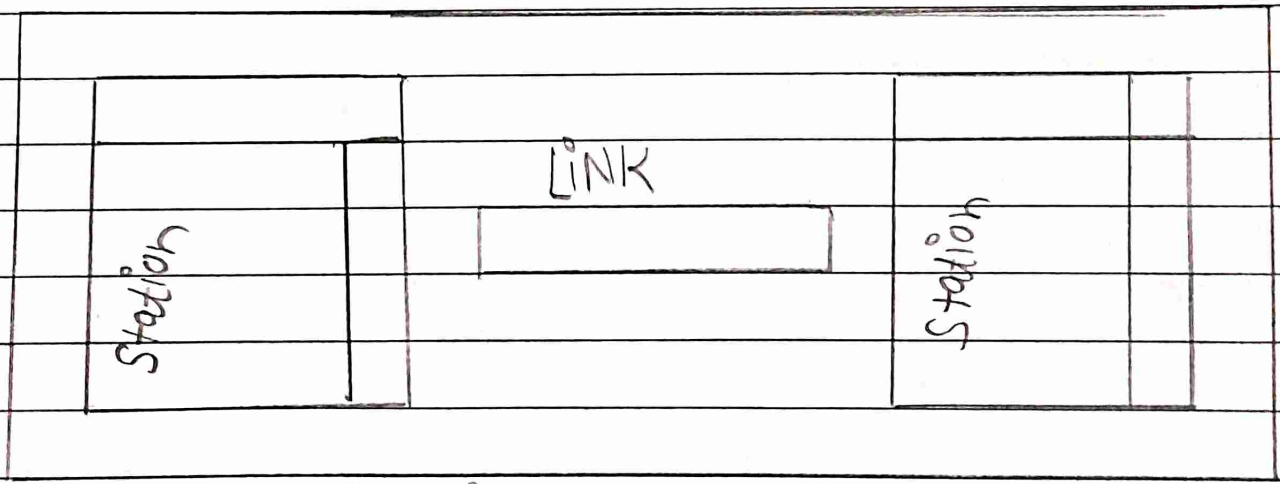
Assignment →2
Data communications

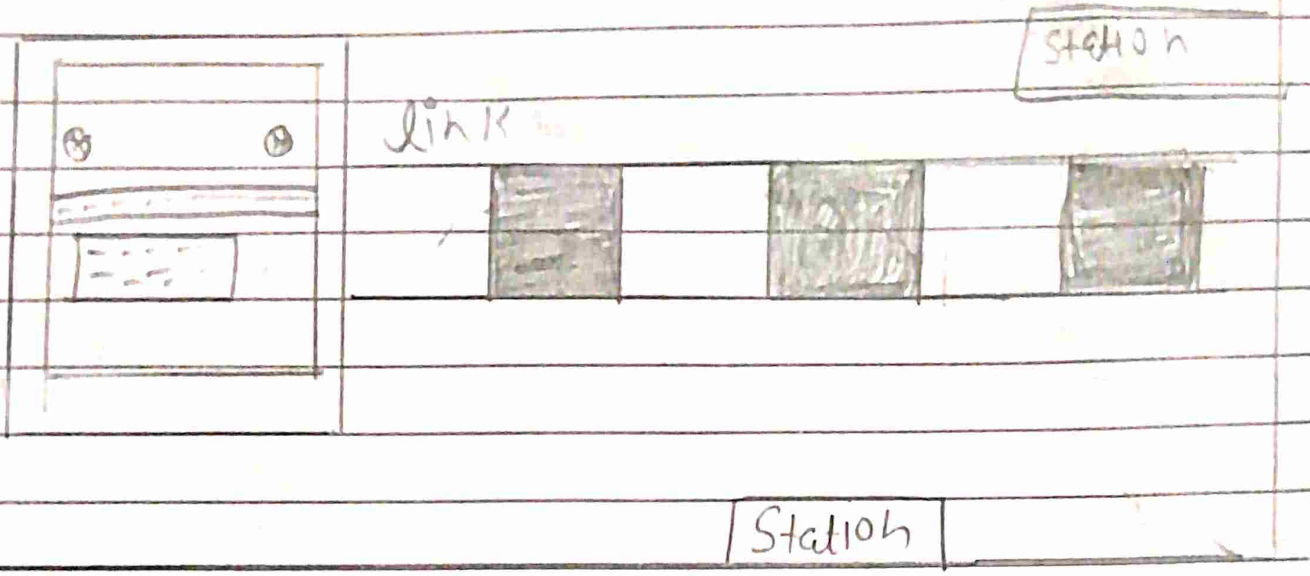
Q1 What are the different types of networks?
ns A network is a set of devices often referd to as n connected by communication links to show the computing R

A node can be a computer, printer, smartPhone refeigeration. car ~~are~~ or any other device capable of sending and/or re data generated by other nodes on the network. Types of connection:
Point of Point
Point-to-multipoint
point-to-point vs point to multipoint.



A point to Point

Station



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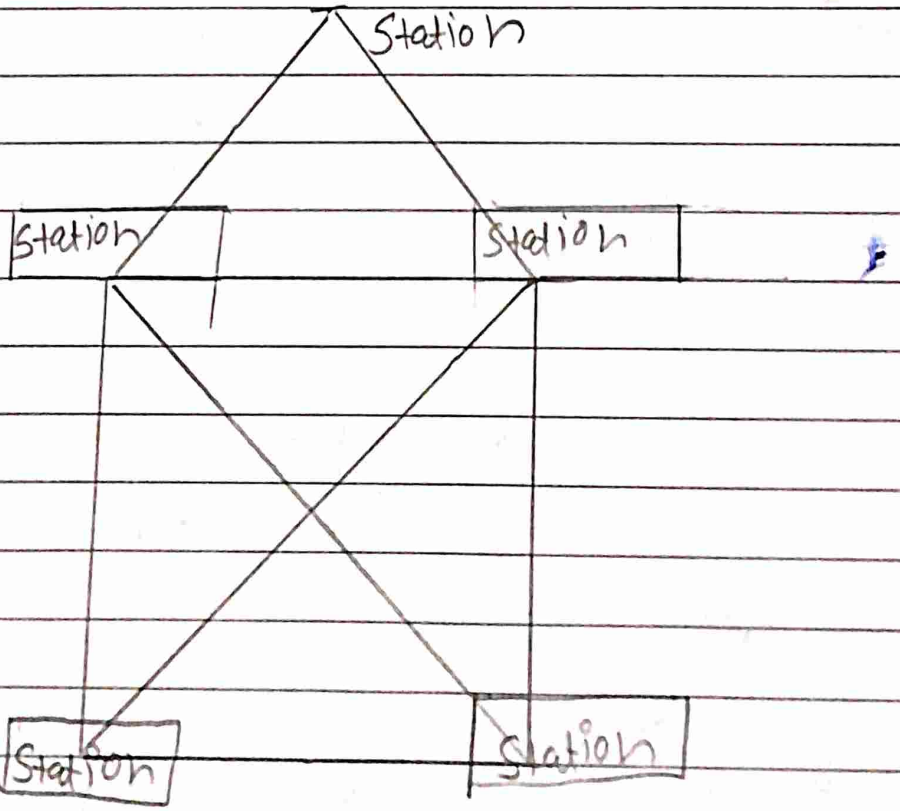
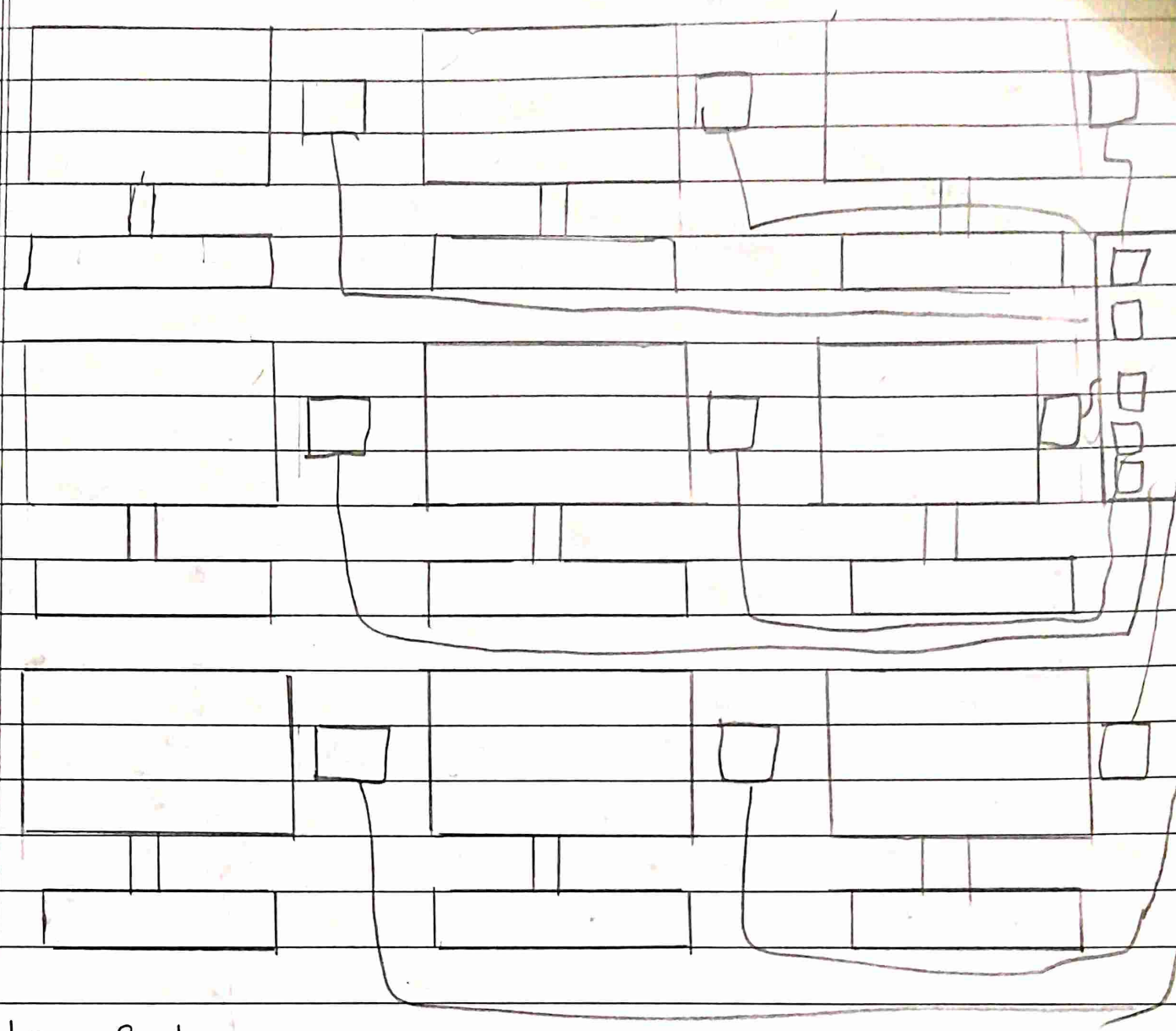
Types of topologies

Topology

- Mesh
- Stare
- Bus
- Ring





Lan Cont

Deperding on the needs of an organization and the type of thennalogy used a lon can be as simple as to Pcs and printer in some on home office or it can exten through a company and Include audio vedio feripheras.

Currently lan size is limited to a few Kms lans are designed to allow Crosoires to be shared between personal computer ar variou

e.g. Printer, software, leg, and application program are data.

One of the computer may be given a large capacity disk device and may become a server to clients software can be stored on this rented server and used as needed by the whole group on addition to size lans are distingoished from other type of networks theire transmission media and topology

WAN (Wide Area Network)

A Wide area network (WA Provides long-distance transmission of data audio video information over large geographics area that may comparise a country a continel or even the whole would wan can be as the back bones that connect a home computer to the Internet we normally refer do the first as a ritend wanted to the second as a point to point WAN.

The switched wan connects the end system which usally comprise a (Internet-walking connecting device) that connects to another LAN or WAN. The point to Point WAN is normally a line based from a telephone are eable to Provider that connects a home computer or small lan to an Internet service provider (ISP) This type of WAN is often used to provide Internet acces.

Q2 Explain the shielded twisted pair (STP) an unshielded twisted pair (UTP)

Ans:- In our modern high tech world are now that just four pair wires bound together in a casing to connect electronic objects to each other Cabel in fact are a necessary component that keep our planet connected most of todays connectivity relies on shielded and unshielded cabel.

Shielded twisted pair cable (STP) has the individual pair of wires agin for double (UTP) has each pair are then cropped Ithubing less expensive and a more popular type of cubling knowing which cabel to use for a specific application depends on the protection need from power frequency (EMT) This is where shielded cabel become Important.

Preventing Electromagnetic Interference (EMT)

Electromagnetic interference (EMT) or radio frequency Interference (RET) as its also refered to is an electronic disturbance generated by external electronic or electrical sources such as electrical circut noise the truth. Is EMI/RET is all around as just like the static you may hear during a phone all the same is true for networking. If the ENT noise is strong enough and prevent computer from hearing each other has to resend the information a second the more often the network slows down. this EMT distershance lower Performance of a circut can be interipted ranging an increas In Error rate to complete loss of information.

Q3 What are difference between baseband and broad-band transmission?

Ans In a baseband transmissin the band with of the cabel is sumed by a single and broad band transmission signals are sent on multiple singals in the sent simeltaneesly also.

i) Uses digital signaling
ii) No frequency division multipleting
iii) Directions transmission
(v)

→ Braband signelling :-
i) Uses along singnalling
(i) Uses an along signalling
(ii) Frequency division multiplexing is possible
(iv) Signal can travel over along distance before weated.

Q4 What are the difference a hub, moden, router and switch?

Ans In an ethernet network there are some networking devices that pay three roles at various levels such as home switches and router the functions of the there devices are all quit different from one another even it some times they are all integrated in to a single divice due to that many people full confused about the differnte between the switch and rooter the following part will focus on the topic hub vs switch rooter, comming to clarify difference among them.

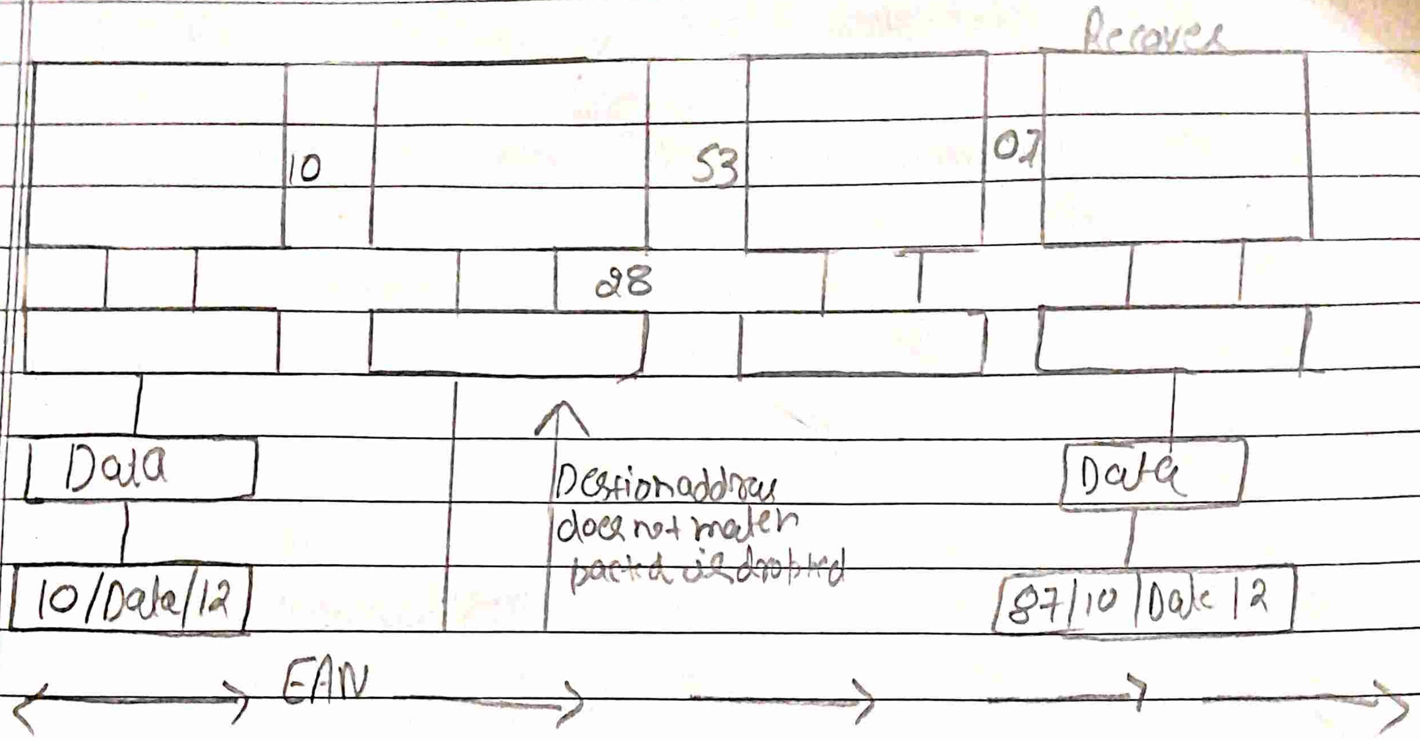
Hub :- Hub is commonly used to connect seghents of LAN (Local Area Network). A Hub contain multiple ports when a packet arrive at one port it is copied to the other ports so that all sigments of the Lancon see all packed Hub act as the comman

connection point for device in a network.

Switch :- A switch operaters at data link (layer) and sometime the networks layer (laye 3) of OSI (open system interconnectio Reference model and there ~~for~~ few sport any packet protab LANS that use switches to join are called switched etherenet LANS, in Network switcheel : Etherne LANS in Network switched etherenel LANS in network the switch is divies that fiteres and forwards packets between LAN segments.

Router :- A router is commected to least two networks Commoney two LAN and WANS (write area networking) or LAN and WANS its U.S.I.S (internet service roiders) netwks ~~connect . wing hadees and~~ the places where two or more here works connect . using headers and works connect . wing headers and for working tonics router mines best to forward the pockets in addition router ~~uses~~ uses protocal to commonic with each other and figorers the best route between any two tales In a work, router forwords data packets almong networks.

When you move the NIC cards from on Pc to another Pc does the MAC address transfered as well.



Q When troubles hooting computer network problems what common hard ware-related problem can occure?
A large percentages of a networks is made up of hardware problems in these can range from malfunctioning hard driver broken Nic and even hardware startup incorrectly hardware configuration is also on of the culprits to looks.

07 In a Network that contains two services and twenty workstation, where is the best to install an anti viruses
The best solution is to install anti-virus on all the computers in the networks. This view protect each device from the other in case some malicious user their to intent a viruses in the servers are ligitimate users.

8 Define Static and Dyanamic IP? Discuss the differance between IPv4 and IPv6

Ans when a device is assigned a static IP address the address does not change most devices are dynamic IP address which are assigned by the network. when they connect and change over time. Static IP and address most users web sit matter dont need static IP addresses static. static IP addresses devices are static IP addresses static. static IP addresses devies ar website hud to remember your IP address one example is VPN solutions is VPN other remot access. one example is VPN solutions that trust (whitelists) certain - IPs for security purpose A static IP address is not required. If you are hosting a server although it simply the setup process google were provides two option dynamic IP address i

used advance setting for you network to configure dynamic DNS inter with is new IP address so outside users can use the same domain home you can choose the dynamic DNS provider and don't how to install additional software on your computer.

Discuss the difference between IPv4 and IPv6

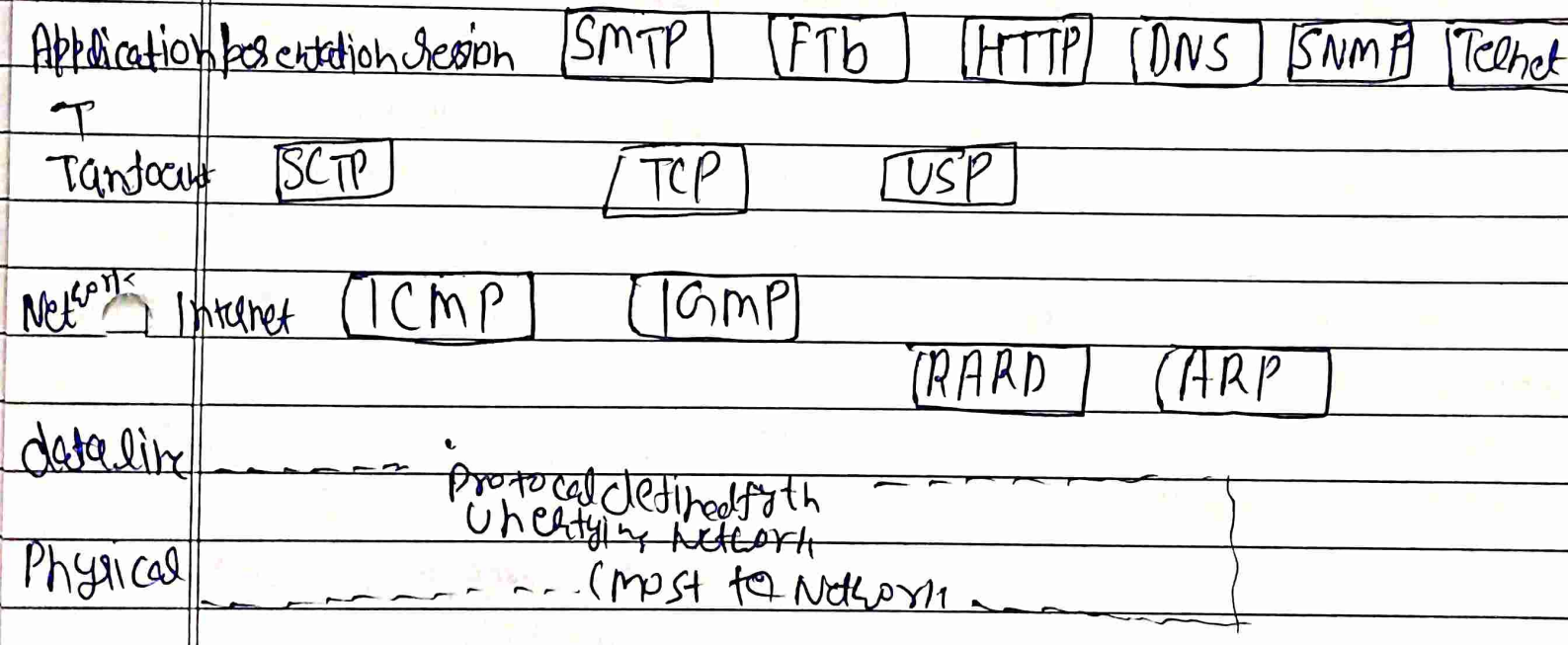
Difference	IPv4	IPv6
① Security	Security is depend on application IPv4 was not designed with security in mind	IPsec (Internet Protocol Security) is build into the IPv6 protocal usable with a proper key infrastructure
Packet header	Does not identify packet flow for QoS handling which include checksum option	packet head contains checksum options flow label it and flow for QoS handling.

3) DNS records Address (A) records maps hostnames to IP addresses. Address (AAAA) records maps hostnames to IPv6 addresses.

4 Compatibility IPv4 addresses are not compatible with mobile devices the host domain name system is not suitable for mobile networks, better suited. IPv6 addresses are represented in hexadecimal colon separated notation that supports mobility.

5) mapping :- (uses ARP (address Resolution Protocol) to map to mac address (uses NBP (Neighbor Discovery Protocol) to map mac address.

Q9 Discuss TCP/IP model in detail :-
The figure given below shows the comparison of TCP/IP



10 What is a web Browser (Browser) Give some example of browser.

Ans A Web browser or simply browser is an application used to access and view websites Common web browser

Include microsoft Edge Internet Explorer Google Chrome mozilla fire fox and Apple Safari. The primary function of a web browser is to render. HTML The code used to design are markup web Pages.

1 What is search engine? Give example?
A Search engin is a web-based tool that enable users to locate information on the word wide web popular examples of search. Search engines are google yahoo! and MSN search Search Engin utilize contain software application (refer to as robots or spiders) that travel along the web following links from page to page side to site to side the information ga by the spiders is used to create a searchable Indexs of W

What is the Internet (WW)? What are the uses of Intern in daily life
The internet is a global network of net-works connecting millions are users world wide via many computer netw using a simple standard common addressing system and communication protocol called. ICPI IP This me sent over the Internet label. broken into sma pices called packets which droved over many diff routes between source and destination computer.
WW (World Wide Web) → WW stand for (Worl Wide Web)