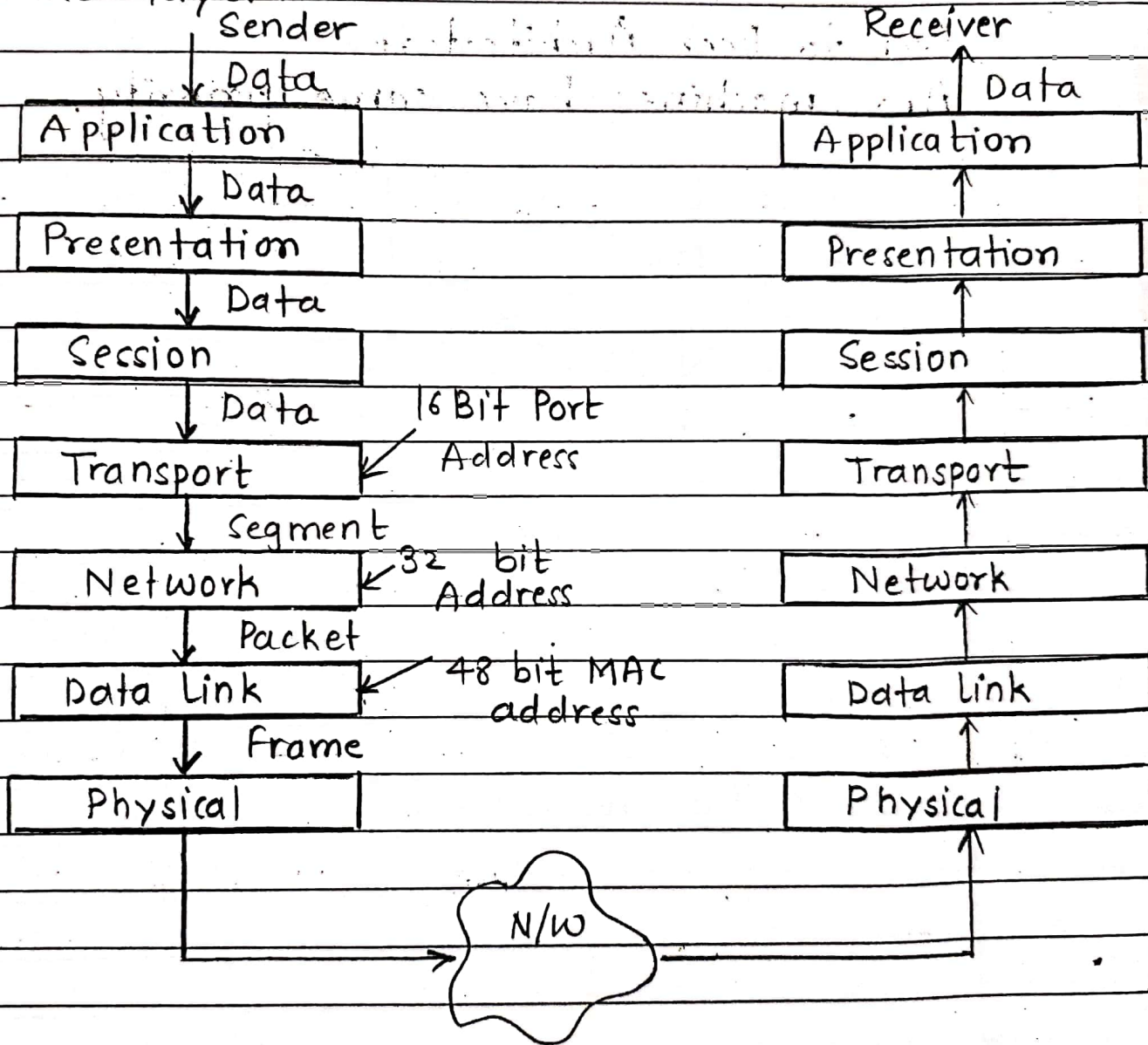


Open System Interconnection :- (OSI)

It is a 7 layer architecture defined by ISO (International Standard Organisation) defines how exactly the n/w works i.e. functionality of each layer.



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Application Layer :-

This layer is responsible for interacting with the user.

Eg: Imagine a web browser (http) to access the web page.

Presentation Layer :-

This layer is responsible for taking data from application layer and perform following 3 things

- (1) Converting data from user understandable form to system understandable form.
- (2) Compression if required.
- (3) Encryption for security.

Session Layer :-

This layer is responsible for dialogue control and token management to establish "connected" with server.

Transport Layer :-

This layer performs process to process communication for which it uses 16 bit port address.

It also performs :-

- (1) Error control
- (2) Flow control
- (3) Congestion control

Network Layer :-

This layer performs host to host communication for which it uses 32 bit IP address.

It also performs fragmentation if required.

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Data Layer :-

This layer maps a packet and converts it into a frame, this is known as framing.

It also performs error control and has a sub layer known as MAC (Medium Access Control) that takes care of collision avoidance and prevention technique.

Physical Layer :-

This layer performs transmission of raw bits of 0's and 1's i.e. electrical s/g to receiver's physical layer through network.

TCP/IP Protocol Suite :

Note : Protocol = Set of Rules

TCP = Transmission Control Protocol

IP = Internet Protocol

It is a 4 layer architecture created before OSI model and focuses on defining protocols at each layer.

Application layer :

It combines 3 layers of OSI model i.e.

(1) Application layer

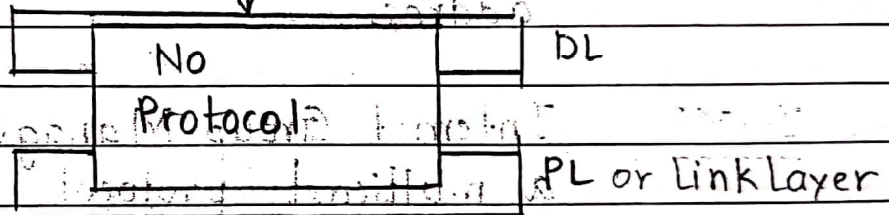
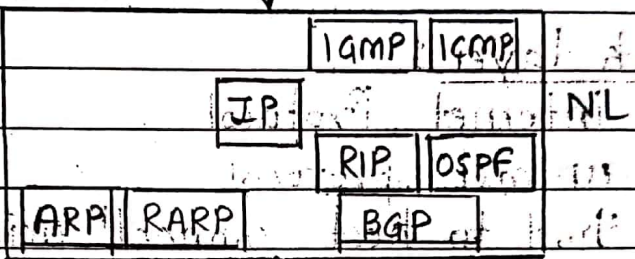
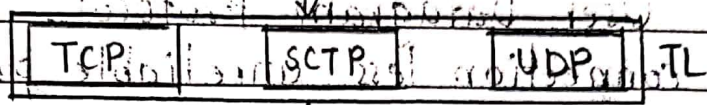
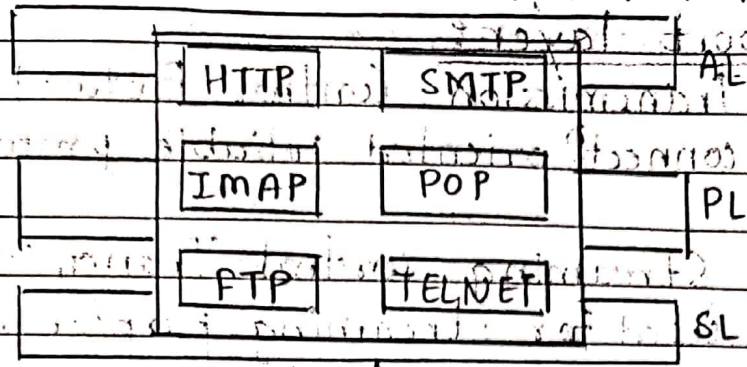
(2) Presentation layer

(3) Session layer.

http = Hypertext Transfer Protocol

addressing web pages

SMTP = Simple Mail Transfer Protocol
sending mails



IMAP = Internet Mail Access Protocol

receiving mail

POP = Post Office Protocol

receiving mail

FTP = file transfer protocol

sending and receiving files

TELNET = connecting local machine to remote machine.

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Transport layer:

TCP = Transmission Control Protocol
connectⁿ oriented reliable protocol.

SCTP = Streaming Control Transmission Protocol
used for streaming purpose.

UDP = User Datagram Protocol
connection less unreliable protocol

Network layer:

IP = Internet Protocol
unicast protocol
host to host connectⁿ using 32 bit IP address.

IGMP = Internet Group Management Protocol
a multicast protocol.

ICMP = Internet Control Message Protocol.
intimate sender that message is not received.

ARP = Address Resolution Protocol
Maps IP to Hardware address

RARP = Reverse Address Resolution Protocol
Maps Hardware to IP address

RIP = Routing Information Protocol
Intra Domain Routing Protocol

OSPF = Open Shortest Path First
Intra Domain routing Protocol

BGP = Border Gateway Protocol
Inter Domain Routing Protocol

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