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ELECTRONICS ENGINEERING

ACE ACADEMY

Topper Handwritten Notes

Advance Communication

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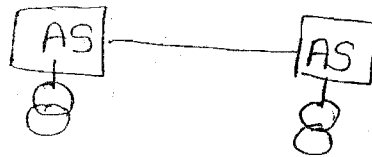**Contact Us: 9311 989 030**

Courier Facility All Over India (DTDC & INDIA POST)

Advanced Communications

Computer Networks

An interconnected collection of autonomous Syste
Computers

Goal 1) Resource sharing

2) Saving money (little price is more performance)

3) Communication possible.

master slave Linking : Not a computer Networks.

## Network Architecture = Layers + Protocol

Layer = module

Purpose : To reduce the design complexity

(one Big module vs 7 Small modules)

Protocol : (understand)

Set of rules & conventions are formulated
to have smooth communications.

→ Day & Zimmerman did big study on two
architectures and then proposed a model.

ARPANET

Advanced Research Project
Agency N/w

IBM's SNA

System N/w
Architecture
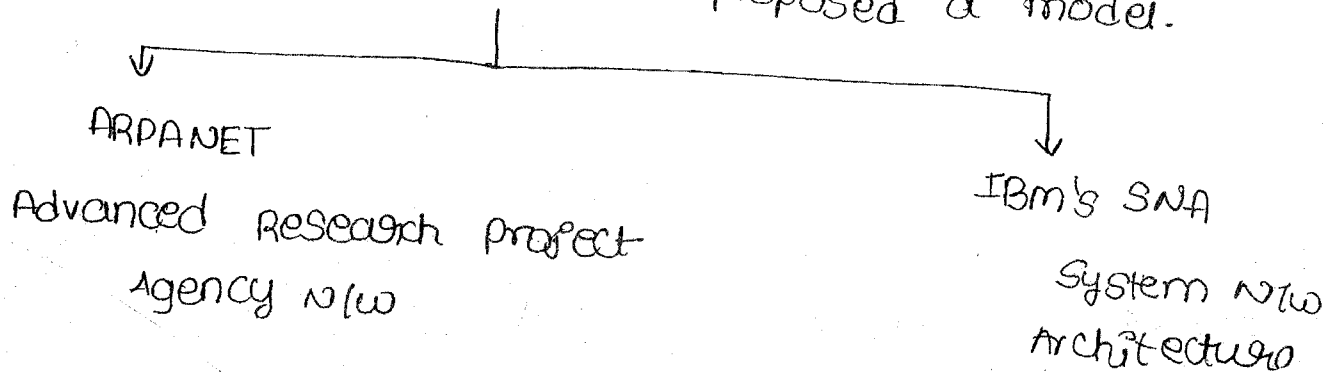
→ The proposed model has 7 modeules (layers) and standardized by ISO with name ISO OSI model.

Proposed model	Existing	Ensuring (Incoming)
ISO - OSI model International stand. orgn — open system Interconnection	TCP / IP Transmission (Co) Control protocol Internet protocol (CL)	ATM Asynchronous Transmission mode.
→ 7 layers	→ 5 layers	→ 3 layers

→ At present the internet is based on TCP/IP architecture

Components of CNW's

Host (end system)
- Create (or) Receive messages

subnet
→ To carry messages
→ collection of Intermediate Switching elements (Routing)

Design Concept

Connection oriented (CO)	Connection Less (CL)
1) Establishing a connection	1) X
2) Transfer data.	2) ✓
3) Releasing Connection	3) X
→ Based on Telephone System	→ Based on postal System.
→ In the sequence, the packets are delivered.	→ Upon receiving, reorde is required as packets go through diff. paths.

Subnet

- → CO ⇒ ATM
- → CL ⇒ IP
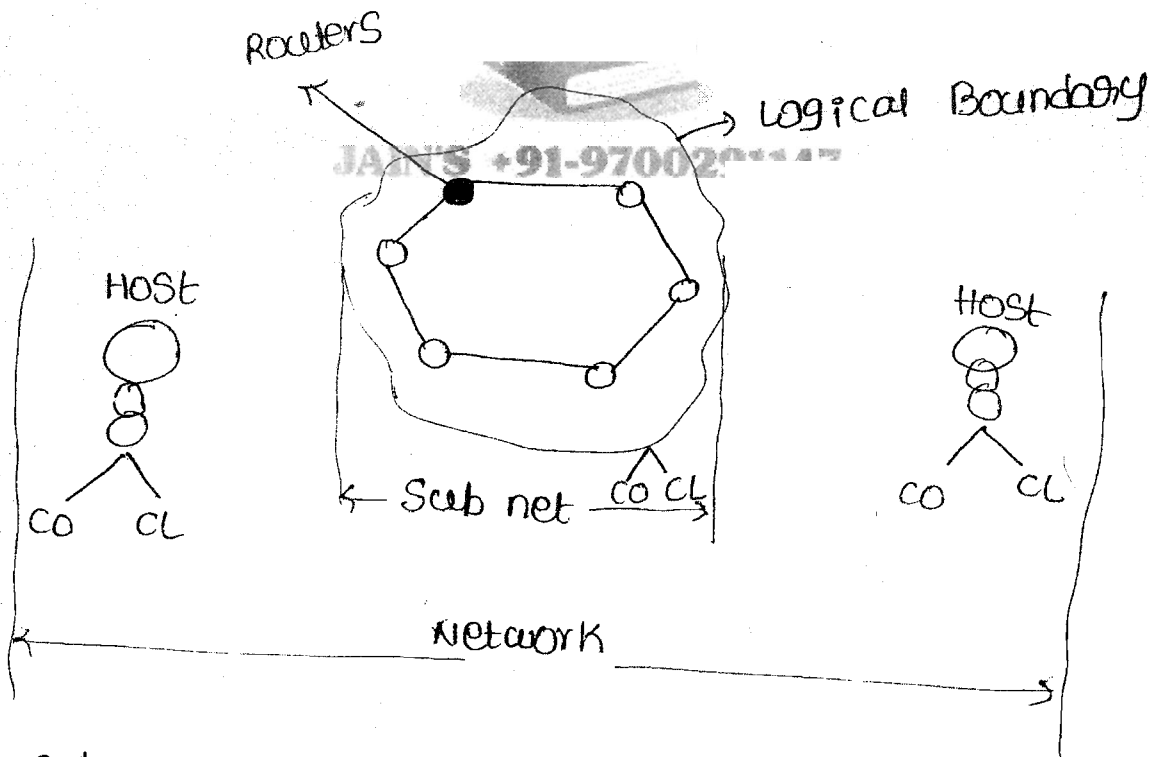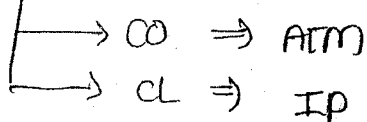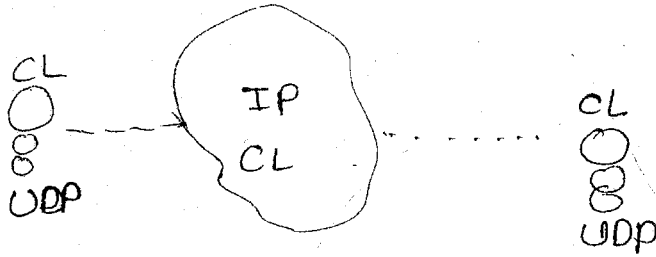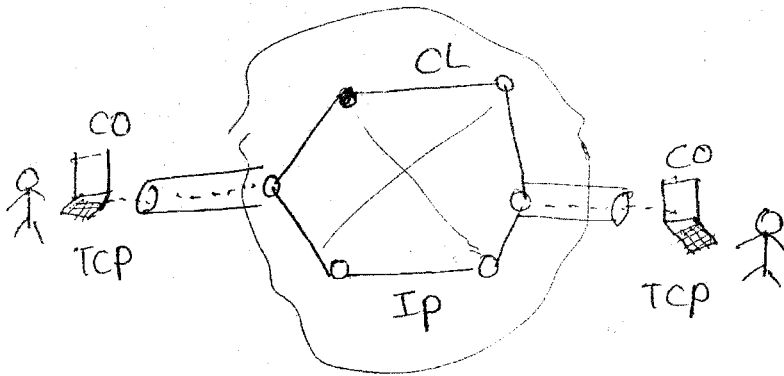
IP - Internet Protocol - CL @ Subnet

TCP - Transmission Control Protocol - CO @ HOST

Reliable device

UDP - User datagram Protocol - CL @ HOST (Query/Response)

① Calculate the % of overhead to transmit a msg of size 'm' bits in a n-layered architecture. where in each layer 'h' bits of header is included.

Sol

$$\frac{nh}{m+nh} \times 100$$

message = m bits = 1000
header = 'h' bits = 10
layers = n = 5

Each layer = h

'n' layers = nh ⟹ 10×5 = 50

Total message = m+nh = 1000 + 50

$$\% \ over head = \frac{Head}{Total\ msg} = \frac{nh}{m+nh} \times 100 = \frac{50}{1050} \times 100$$