

1) Introduction to Computer Network.

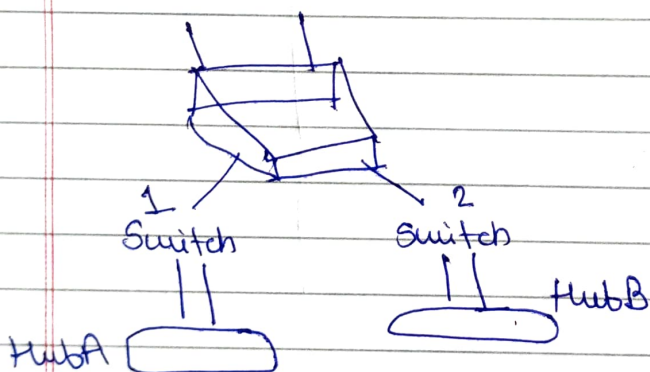
A Network is a group of two or more devices that are connected to exchange data and resource.

LAN :- Local Area Network. :- building, School

MAN :- Metropolitan Area Network :-

WAN :- Wide Area Network.

①. Hub,	Switch	Router.
↓		↓
physical layer	Data link layer.	it is a network layer

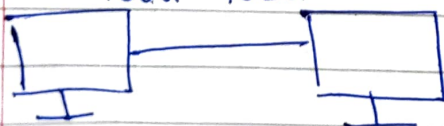


Hub	Switch
10Mbps-100	

2)

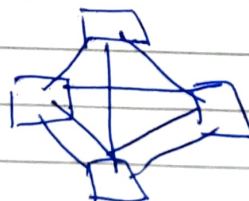
Types of Network

Point-to-Point.

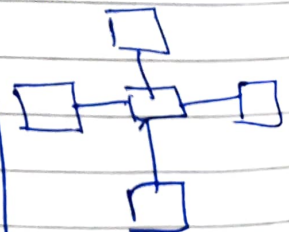


Topology

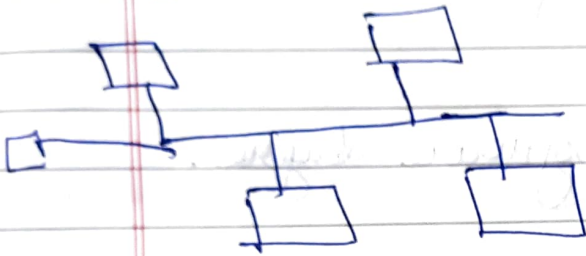
Mesh



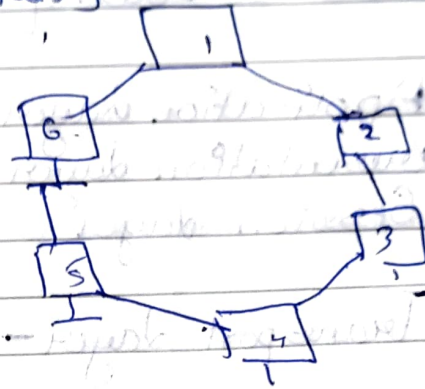
Star



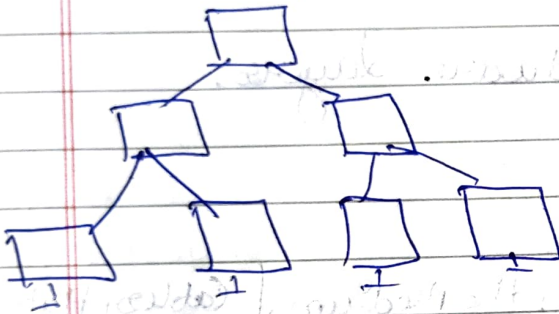
Bus



Ring



Tree Topology.



(c) **Bandwidth**:- It is a measure that denotes the maximum capacity of a wired or wireless communication.

(d) **Node**:- eg:- printer, bridges and Switch.
Link:- Wire or Wireless.

→ Theoretical (book). 3) OSI Model. [Open System Interconnection]

Application layer.
Presentation layer.
Session layer.] Software layers.

Transport layer - Heart of O.S.I.

Network
Data-link
physical] Hardware layers.

(1) physical	Actual bits over the Medium.	Cables, Hubs.
(2) DataLink	MAC addressing, error detection	Ethernet, PPP.
(3) Network	Routing, logical addressing	IP, ICMP.
(4) Transport	Reliable Delivery, flow control	TCP, UDP.
(5) Session	Session creation, management term	APIs,
(6) Presentation	Data format Encryption	SSL, TLS.
(7) Application	User Interaction, Service access	HTTP, FTP.

(Top to Bottom)
7 → 1.

(5) IPV4 vs IPV6.

32bit

128bit

Decimal

Hexadecimal

Security ↓

↑

Speed ↓

↑

Address

4.3 billion

340 undecillion

(6)

Fragmentation:- Splitting large data into smaller pieces. So they can travel over a network.

IPv4 → Support

IPv6 → Avoids

4) TCP/IP.

What is TCP/IP.

- ① Transmission Control Protocol / Internet Protocol.
- ② A practical networking model used for communication over the internet.
- ③ Defines how data should be packetized, addressed, transmitted, routed and received.

(2) Layer of TCP/IP.

- | | |
|------------------------------|---------------------------------|
| (4) Application layer. | End User Service. |
| (3) Transport layer. | End-to-End Communication. |
| (2) Internet layer. | Logical address Routing. |
| (1) Network Interface layer. | Physical address media control. |

it Model combines some layer (Session Presentation) = Application.