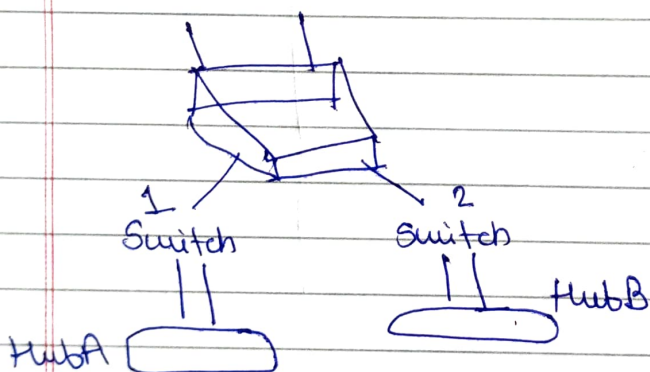1) ⊙ Introduction to Computer Network.

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

LAN :- Local Area Network. :- building, School
MAN :- Metropolitan Area Network :-
WAN :- Wide Area Network.

⊙. Hub, | Switch | , Router.
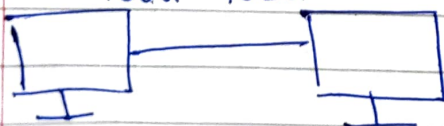⇩. | | ⇩.
physical | Data Link | it is a network
layer | layer. | layer



1
Switch

2
Switch

HubB

HubA

Hub. | Switch
10Mbs-100 |
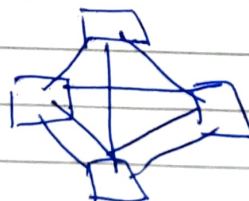
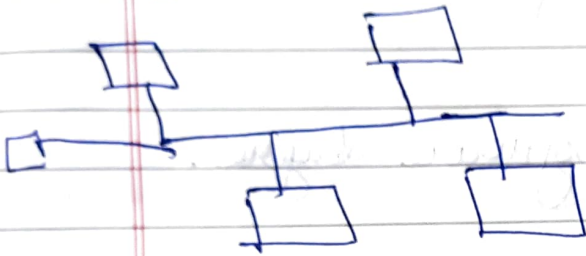2). Types of Network Topology.
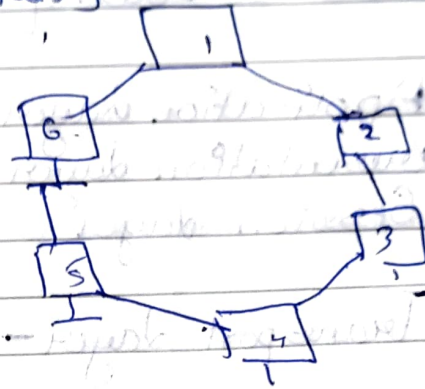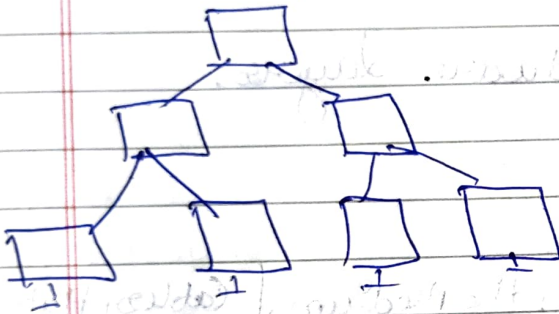Point - Point.        Mesh        Star
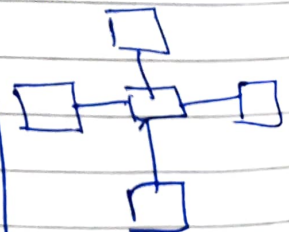
## Bus.

## Ring

## Tree Topology.

⊙ **Bandwidth:-** It is a measure that denotes the maximum capacity of a wired or wireless Communication

⊙ **Node:** eg:- printer, bridges and Switch.

**Link:-** Wire or Wireless.

→ theoritical (book).

3) OSI. Model. [Open System Interconnection].

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

Transport layer — Heart of O.S.I.

Network
Data-dint } — Hardware layers.
physical.

| | | | |
|---|---|---|---|
| (1) | physical → | Actual bits Over the Medium. | Cables, Hubs. |
| (2) | Data link → | MAC addressing, error detiction | Ethernet, PPP. |
| (3) | Network | Routing, logical addressing | IP, ICMP. |
| (4) | Transport | Reliable Delivery, flow Control | TCP, UDP. |
| (5) | Session | Session Creation, management term | AP IS, |
| (6) | Presentation | Data format Encryption | SSL, TLS. |
| (7) | Application | User Interaction, Service access | HTTP, FTP. |

( Top to Bottom )
( 7 —→ 1. )

→ Internet Protocol.
Version 4        Version 6.
→

(5)  IPV4  vs  IRV6.

32bit          6 128bit.

Decimal        Hexadecimal.

Security ↓        ↑.
Speed   ↓        ↑

Address.  4.3 billion.    340 undecibillion.

(6)  Fragmentation:- Spliting  large data  into Smaller
     pieces.  So they can  travel Over a  network.
     IPv4 → Support        IPv6 avoids.

## 4). TCP/IP.

### What is TCP/IP.

⊙ Transmission Control Protocol/Internet Protocol.
○ A pratical networking model used for Communication. Over the internet.
⊙ Defines how data Should be packetized, addressed, transmitted, routed and recived.

### (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 modia (Control). |

ut Model Combines Some Layer (Session & Presentation) =
Application.