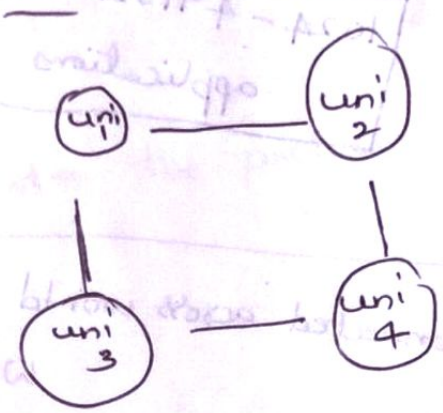
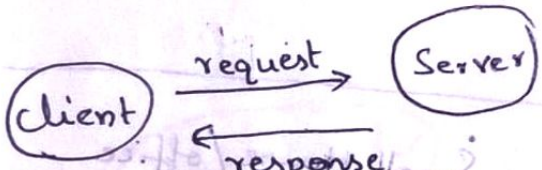
Computer Networking :-

How it started :-



Client-Server Architecture :-



Protocols :-

Rules set by Internet Society (TCP, UDP, HTTP)

How data is transferred :-

Data is not sent as a whole,
it is divided into packets and
sent one by one.

Port Numbers :-

Used to Identify the application u/g.

IP Addresses :- Used to identify the device.

HTTP → port 80 always on

0 – 1023
Reserved Ports

1024 – 49152
applications

Internet - physically connected across world using wires.

physical :- Optical fibre Cables, Coaxial Cables

wireless :- Bluetooth, Wifi, 3G, 4G, 5G, LTE etc

Local Area Network :- Small House/office (Ethernet, Wifi)

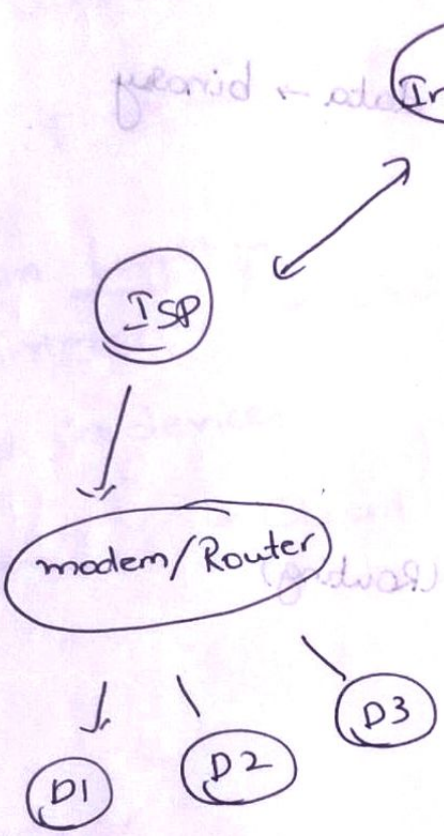
Metropolian Area Network :- Across a city

Wide Area Network : Across Countries (Optical Fibre Cables)

every network is a combination of these 3.

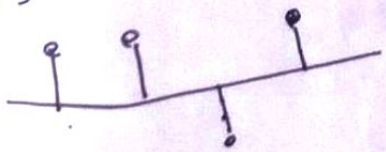
Modem :-
Digital Signal → Analog Signal
and vice versa

Router :-
Routes the packets

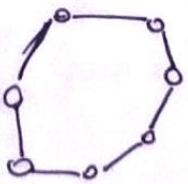


Topologies :-

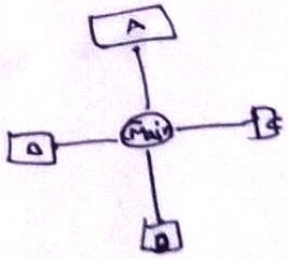
① Bus



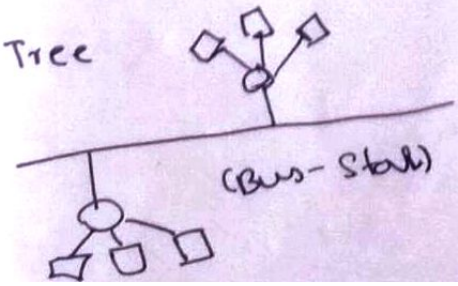
② Ring



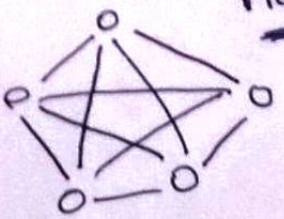
③ Star



④ Tree



⑤ Mesh



Structure of the network :-

OSI model :- (open systems Interconnection model)

Application Layer :- Software

↓ (Data)

Presentation Layer :- data → binary

↓

session Layer

↓

Transport Layer

↓

Network Layer (Routing)

↓

Data Link

↓

physical Layer.

TCP/IP model :-

Application Layer
↓
Transport Layer
↓
Network Layer
↓
Data Link
↓
physical Layer.

① Application Layer :-

* users interact
* whatsapp, browsers, etc
* located in devices
* Client-Server architecture
* Protocols

Protocols :-

web protocols :-

TCP/IP :-

HTTP,
DHCP,
FTP, SMTP, POP3 & IMAC * SSH

VNC

Protocol :-
a defined set of standards that computers must follow in order to communicate properly

Computer Networking :- full scope of how computers communicate with each other.

Physical Layer :-
Represents the physical devices that interconnect computers.

Cables ⚡ fibre Optic Cables

Hub :- physical layer device that allows for connections from many computers at once.

Collision Domain :- "Data Collision"

Network Switch :- Modem Hub. } Primary device to connect to LAN
Data Layer device }

Router :- Network Layer device (Back-bone of the Internet)

Broader Gateway Protocol :- (BGP)
routers share data with this protocol, which lets them learn about the most optimal paths to forward traffic.