Computer Network

Date:

Interview

Resource Sharing
Saving Money (by using servers)
Reliability.
Communication.

Physical layer ———— wire
———— wireless

Each layer have protocols

Packet — Cisco

Read about architecture / Reference Model

OSI , TCP/IP
7 layer   4 layer

② Book:- Behrouz A Forouzan

main → William Stalling
S Tanebaun

eg- HTTP, SMTP, POP, CSmm

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Data Communication

It's the exchange of data bet^n two devices via some form of Tx medium

| Sender | → Message → | Receiver |
Protocols   Medium.   Protocols
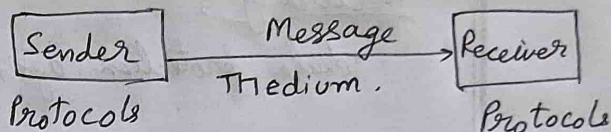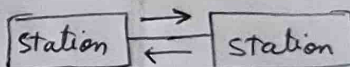
Protocols:- ?

Data Flow:- Simplex, Half Duplex, Full Duplex, ~~Triplex~~,

Simplex:- One direction only (Mouse Keyboard)   Main frame — Monitor
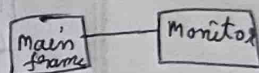
H Duplex:- Both direction but one at a time (Walkie Talkie)   Station ⇄ Station

F. Duplex:- ,, ,, simultaneously (phone)   Station ⟷ Station
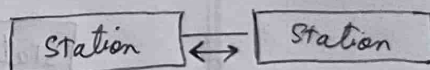
NETWORK :- Set of devices (often referred to as nodes) connected by com^m links

Nodes:- Computer / Printer / monitor

links :- wired / wireless.

Cable / OFC   air

Network Criteria :-

① Performance (OFC > TPC)

- Depends on network element
- Measure in terms of <u>delays</u> and <u>Through put</u>, <u>latency</u>

⑪ Reliability :- (Robustness)

- Failure rate of n/w components
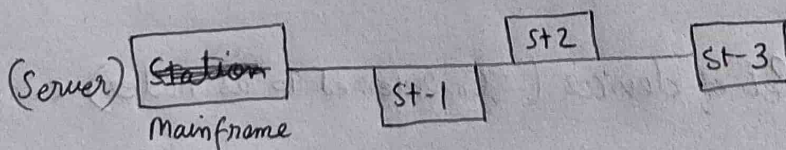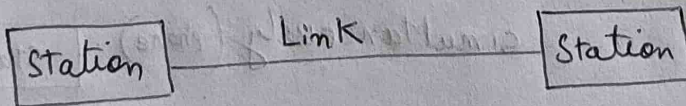- Measured in terms of availability / robustness.

⑪⑪ Security :-

- data protection against corruption (loss of data due to errors & Malicious users)

Physical Structures

- Type of Connection
  → Point to point (Single Tx - Rx)
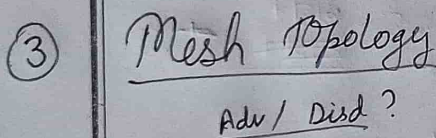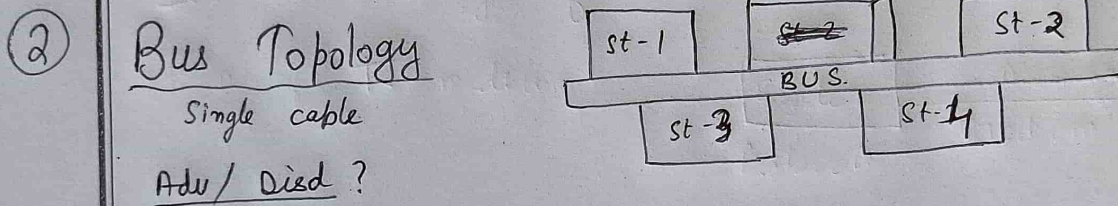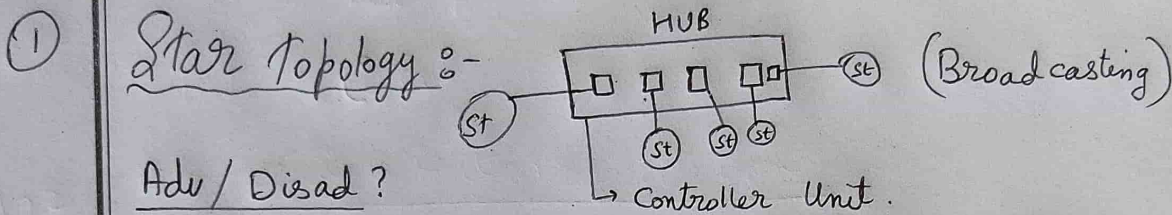 → Multipoint to multi recipient of Single Tx

| Station | ——Link—— | Station |

(Server) ~~Station~~ —— St-1 —— St2 —— St-3
Mainframe

- **Physical Topology :-**
  - Configuration/arrangement
- **Connection of devices**
- **Types of Tx** ← Unicast / multicast / Broadcast

Link̶ Ring ⎤
Star - ⎥
Mesh ⎥ } Main
Bus - ⎦

Tree ⎤
Hybrid ⎦ } Aux

① **Star Topology :-**

Adv / Disad ?

HUB — St (Broadcasting)
→ Controller Unit.

② **Bus Topology**
   Single cable
   Adv / Disd ?

SOURCE
St-1   St̶-̶2̶   St-2
        BUS.
   St-3   St-4

③ **Mesh Topology**
   Adv / Disd ?

Concept of Shortest path
Algorithm.

Student : ....