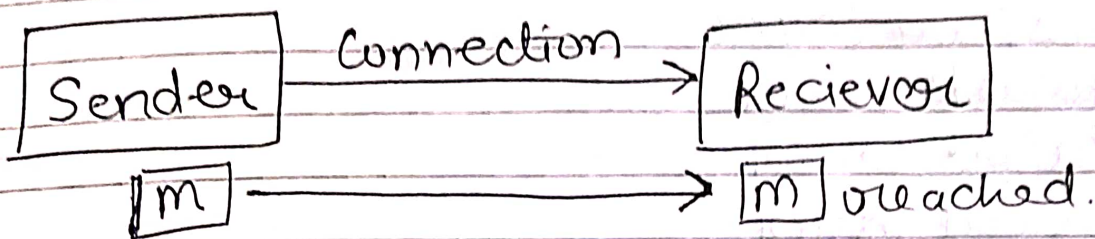
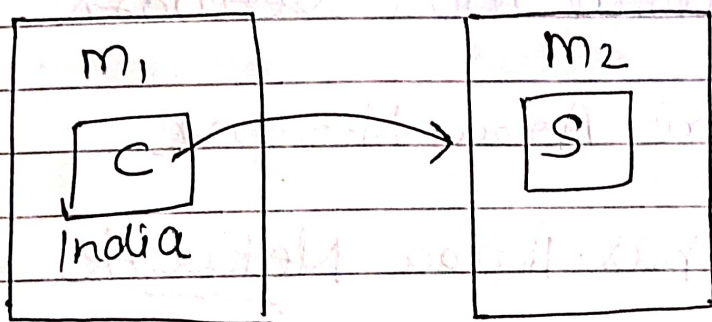


① Introduction to Computer Network.

- Computer Network is a collection of Computer devices.
- The purpose of Computer Network is to share the data between computers.



- The data send by the sender must be understand by receiver. to asure this there must be protocol.



To communicate between client and server present in different country smoothly we need CN

Functionalities

↓ Mandatory

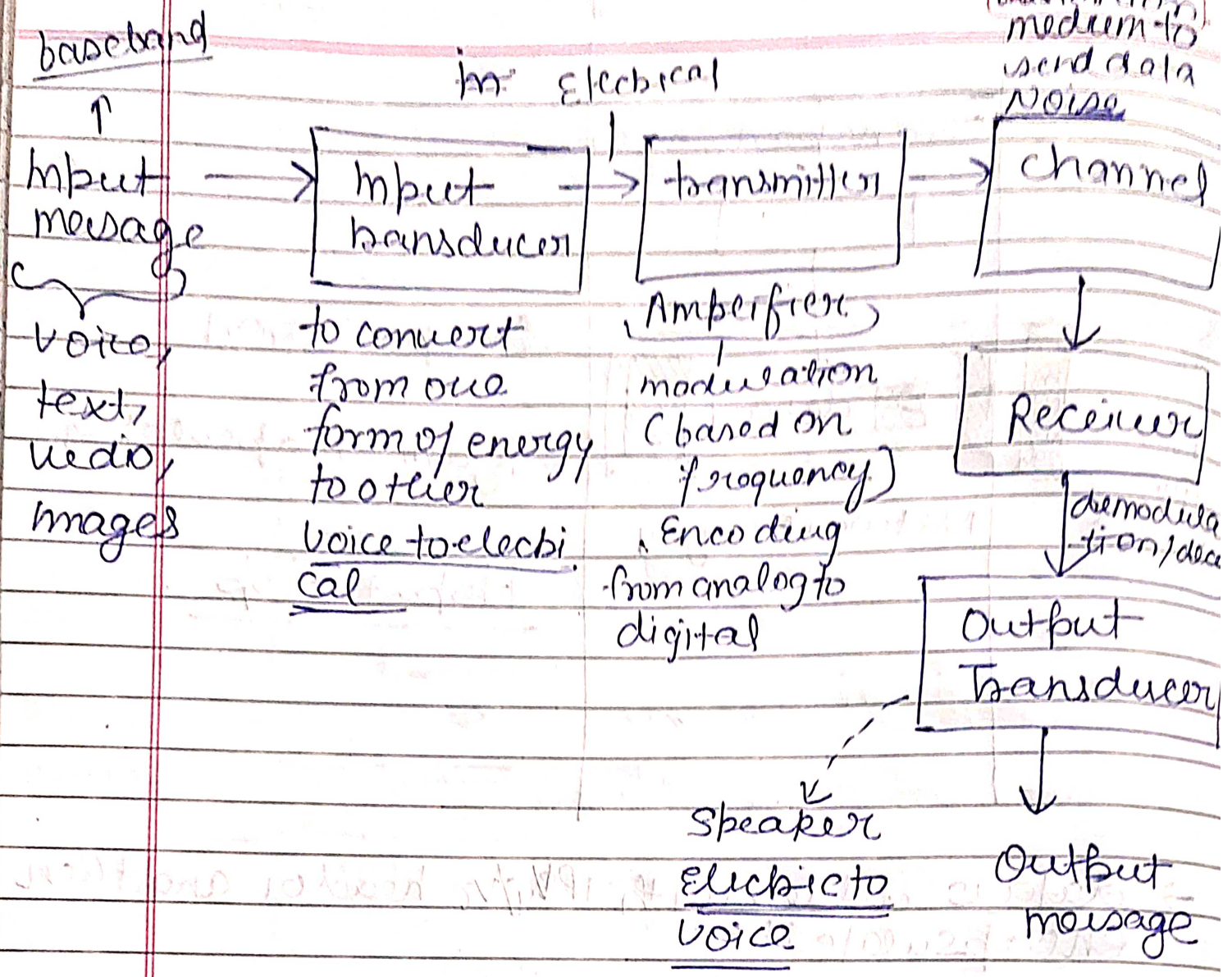
- Error Control
- flow control
- Multiplexing
- Demultiplexing

↓ Optional

- Encryption / Decryption
- Check point

There are more than 90 functionalities.

Block diagram of Communication

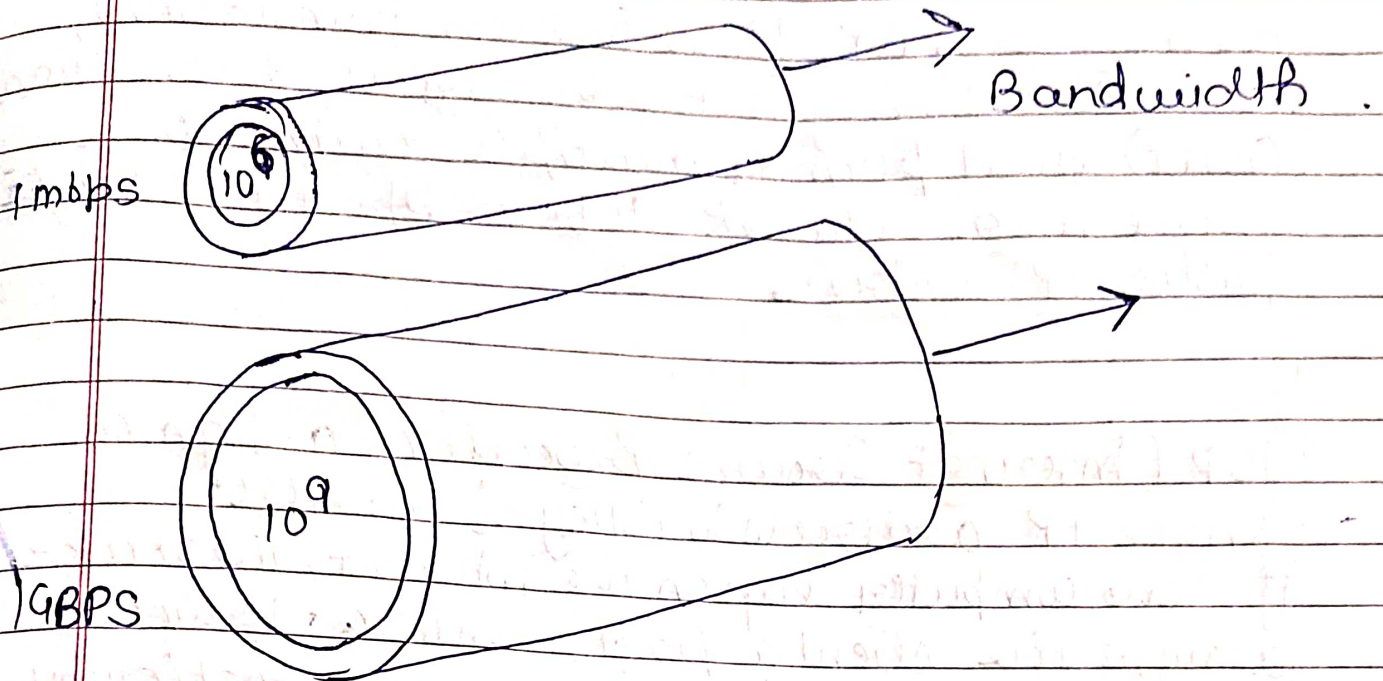


Bandwidth / Throughput / Latency

1 → **Bandwidth** → This is about the volume of data that can be transferred over a network. The standard measurement for data transfer speed is megabits per second (Mbps)

2 **Throughput** - While bandwidth tells you how much data could theoretically be transferred across the network, throughput indicates how much data was actually transferred from a source at any given time.

3- Latency → This measures the time it takes for data to get to its destination across the network. It is commonly measured as a round trip delay. It is usually measured in milliseconds (ms).



Difference between FAST/ Gigabit Ethernet

Fast Ethernet

- It offers 100 mbps and introduced in 1995
- 100 BASE T4, 100 BASE TX, 100 BASE FX
- more delay
- Coverage limit is upto 10 km
- successor of 10-Base T Ethernet

Gigabit Ethernet

- Gigabit Ethernet offers 1 gbps speed in 1999
- 1000 BASE SX, 1000 BASE-LX, 1000 BASE-CX, 1000 BASE-T
- less delay
- Coverage limit is upto 70 km
- Gigabit Ethernet is successor of fast Ethernet