# Data Communication
## &
## Networking

- Analog to Analog
- Analog to Digital
- Digital to Digital
- Digital to Analog (Important Conversions)

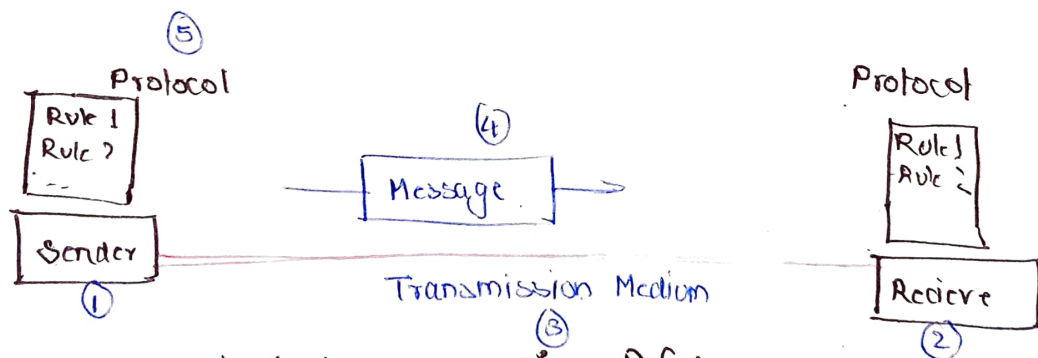### (Internal 30)

5 - Quiz          5 - Attendance

10 - Assignment    10 - Class Test.

## Introduction :-

- The term telecommunication means communication over a distance

- Data communications are the exchange of data between two devices via some form of transmission medium such a wire cable.

## Block Diagram of Comm. System :



⑤ Protocol
Rule 1
Rule 2
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④ Message

Sender ①

Transmission Medium ③

Protocol
Rule 1
Rule 2

Recieve ②

## So Important factors regarding DC:

- **Delivery :** Data must deliver to correct Destination, and must by recieved by only the one who set.

- **Accuracy :** There should not be any alteration in the message and even if there is, then it must be corrected and sent to recieves by user accurately.

- **Timeliness :** Data must be sent that timely. in For Real time transmission, Data must be sent as soon as it is produced

- **Jitter :** Jitter refers to variation in time delay for transmission of data. Uneven arrival time of data packets. It must be even to provide even quality of va d video.

SMTP — Simple Mail Transfer Protocol.

FTP — File Transfer Protocol.

## Data Representation :

(i) Text : Represented by bit Pattern known as code.
Unicode is 32 -bit coding. ASCII is 8 -bit

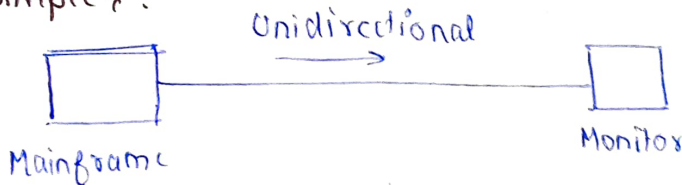(ii) Number : ASCII is not used, Binary representation is used.

(iii) Image : Matrix of Pixel.. For B/w, we can use 2-bit grayscale. For colourful, we use RGB
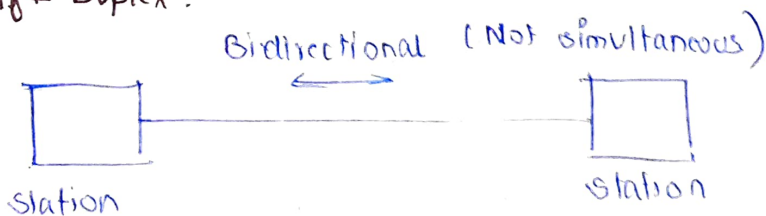
(iv) Audio : Continuous

(v) video.

## Data flow :-

a. Simplex.



Unidirectional

Mainframe                     Monitor

b. Half - Duplex.



Bidirectional (Not simultaneous)

Station                     station

c. Full - Duplex.



station                     Station