DATA COMMUNICATION

- Data Communication is a process of exchanging data or information In case of computer networks this exchange is done between two devices over a transmission medium.
- This process involves a communication system which is made up of hardware and software.
- The hardware part involves the sender and receiver devices and the intermediate devices through which the data passes. The software part involves certain rules which specify what is to be communicated, how it is to be communicated and when.
- It is also called as a Protocol.
- The following sections describes the fundamental characteristics that are important for the effective working of data communication process and is followed by the components that make up a data communications system.

Characteristics of Data Communication –

- The effectiveness of any data communications system depends upon the following four fundamental characteristics:

1. Delivery: The data should be delivered to the correct destination and correct user.

2. Accuracy: The communication system should deliver the data accurately, without introducing any errors. The data may get corrupted during transmission affecting the accuracy of the delivered data.

3. Timeliness: Audio and Video data has to be delivered in a timely manner without any delay; such a data delivery is called real time transmission of data.

4. Jitter: It is the variation in the packet arrival time. Uneven Jitter may affect the timeliness of data being transmitted.

- **Components of Data Communication** –

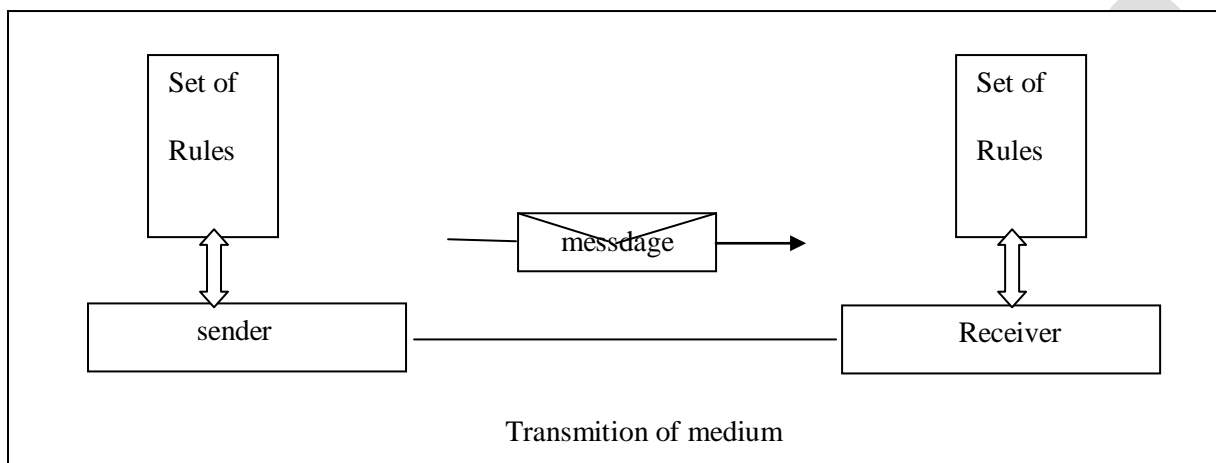A Data Communication system has five components as shown in the diagram below:

Fig. Components of a Data Communication System

1. Message- Message is the information to be communicated by the sender to the receiver.

2. Sender-   The sender is any device that is capable of sending the data (message).

3. Receiver- The receiver is a device that the sender wants to communicate the data (message).

4. Transmission Medium- It is the path by which the message travels from sender to receiver. It can be wired or wireless and many subtypes in both.

5. Protocol – It is an agreed upon set or rules used by the sender and receiver to communicate data.
A protocol is a set of rules that governs data communication. A Protocol is a necessity in data communications without which the communicating entities are

like two persons trying to talk to each other in a different language without know the other language.