(b) Electric or Electromagnetic encoding of data is called Transmission.

(c) In full duplex the communication channel is used in both directions at the same time.

(d) Analog signal is measured in Volts and its frequency in Hertz.

(e) The technique by which a digital signal is converted to analog form is known as modulation.

4.4 COMPUTER NETWORK

A computer network is an interconnection of various computer systems located at different places. In computer network two or more computers are linked together with a medium and data communication devices for the purpose of communicating data and sharing resources. The computer that provides resources to other computers on a network is known as server. In the network the individual computers, which access shared network resources, are known as workstations or nodes.

Computer networks may be classified on the basis of geographical area in three broad categories.

1. Local Area Network (LAN)
2. Metropolitan Area Network (MAN)
3. Wide Area Network (WAN)

(a) Local Area Network

Network used to interconnect computers in a single room or rooms within a building or nearby buildings is called Local Area Network (LAN). LAN transmits data with a speed of several megabyte per second (10^6 bytes per second). The transmission medium is normally coaxial or twisted-pair cables. This usually spans about 0-5 kms and is generally a private network owned by an organization. For example: Office LAN, Hospital LAN, Campus-wide LAN, etc.

LAN links computers through software and hardware in the same area for the purpose of sharing information. Usually LAN links computers within a limited geographical area and are therefore connected by a cable. Addition of a new computer in the network therefore requires cabling to be done. People working in LAN get more capabilities in data processing, work processing and other informa-

Offline Editing/Composing/Reading: One does not have to be connected to the Internet all the time to be able to read/edit/compose messages. This is a very important feature which many people do not make use of. Ideally, one should log into the Internet, download all the messages into one's own hard disk and then disconnect from the Internet. Once the user is offline, he should read all the messages that have been received. Even composing one's own messages, editing the same or replying to messages received ought to be done when one is off-line. This result in saving of Internet time as also helps in keeping telephone lines free. It is also possible to compose messages and save them as drafts so that at a later stage, the same can be edited or continued and then sent.

Forwarding of messages: It is possible to forward any message received from, say, Mr. A to Mrs. B without retyping the message.

Transfer of Data Files: An important use of the E-mail is the ability to send/receive data files to/from a client. For example, at the time of consolidation of accounts of a client, the data files containing final accounts of the branches of that client can be obtained via E-mail and after consolidation and finalization, the same can be sent back to the client's branches for closing entries etc. This would result in considerable saving of time, energy and money.

Greeting Cards: On the Internet, there are several sites which offer free greeting cards for thousands of occasions to anybody who wants to send greeting differently. To send an electronic greeting card, one has to simply visit a site offering this facility, select a card from amongst the several available, type in one's message, name and E-mail address of the recipient, name of the sender and with a simple click, send the card. The recipient is notified by E-mail that he has been sent a greeting card. He can then access the card by simply clicking on the web-site address of the site, which has provided the facility of the greeting card. Most such cards also come with animation i.e. music and video with movements. This makes the card extremely attractive, interesting and many times better than the traditional printed cards.

4.7 VOICE MESSAGING

Voice messaging is a new communication approach, which is similar to electronic mail except that it is audio message, rather than text messages that are processed. A sender speaks into a telephone rather typing, giving the name of the recipient and the message and the sender's voice signal is then digitized and stored. The system can then either delivers the message at a specified time in the future or the recipient can retrieve it from a database. The message is