



# **SNS COLLEGE OF TECHNOLOGY**

**An Autonomous Institution  
Coimbatore-35**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade(III cycle)  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **19ECB301-ANALOG AND DIGITAL COMMUNICATION**

**III YEAR/ V SEMESTER**

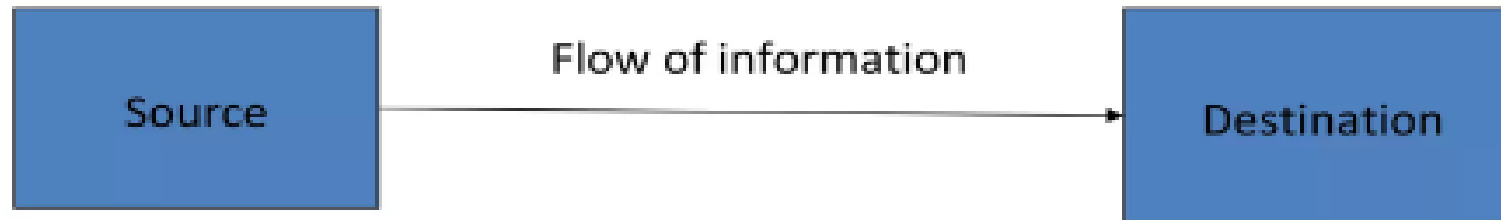
#### **UNIT 1 – ANALOG COMMUNICATION**

**TOPIC – INTRODUCTION TO COMMUNICATION SYSTEMS**



# INTRODUCTION

- The basic process of exchanging information from one location (source) to destination (receiving end).
- It refers to the process of sending, receiving and processing of information/signal/input from one point to another point.





# Electronic Communication System



- It is defined as the whole mechanism of sending and receiving as well as processing of information electronically from source to destination.
- To produce an accurate replica of the transmitted information that is to transfer information between two or more points (destinations) through a communication channel, with minimum error.

## Examples:

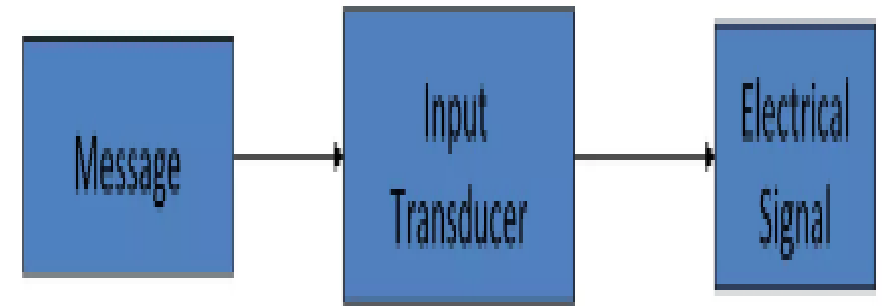
Radiotelephony, broadcasting, point-to-point, mobile communications, computer communications, radar and satellite systems.



# ELEMENTS - TRANSMISSION

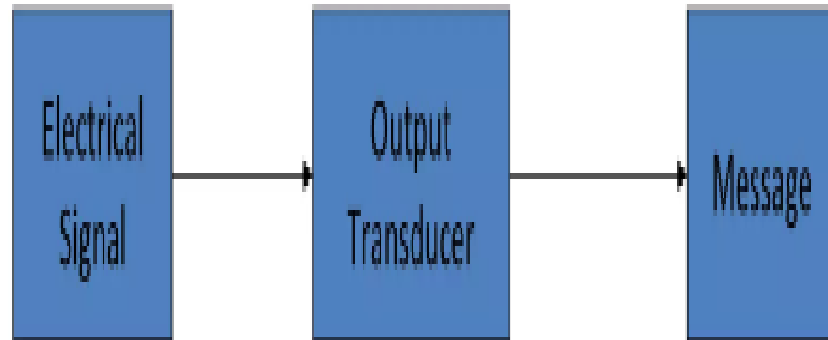


- 1. Message** – physical manifestation produced by the information source and then converted to electrical signal before transmission by the transducer in the transmitter.
- 2. Transducer** – Device that converts one form of energy into another form.
- 3. Input Transducer** – placed at the transmitter which convert an input message into an electrical signal.





# ELEMENTS-RECEIVER

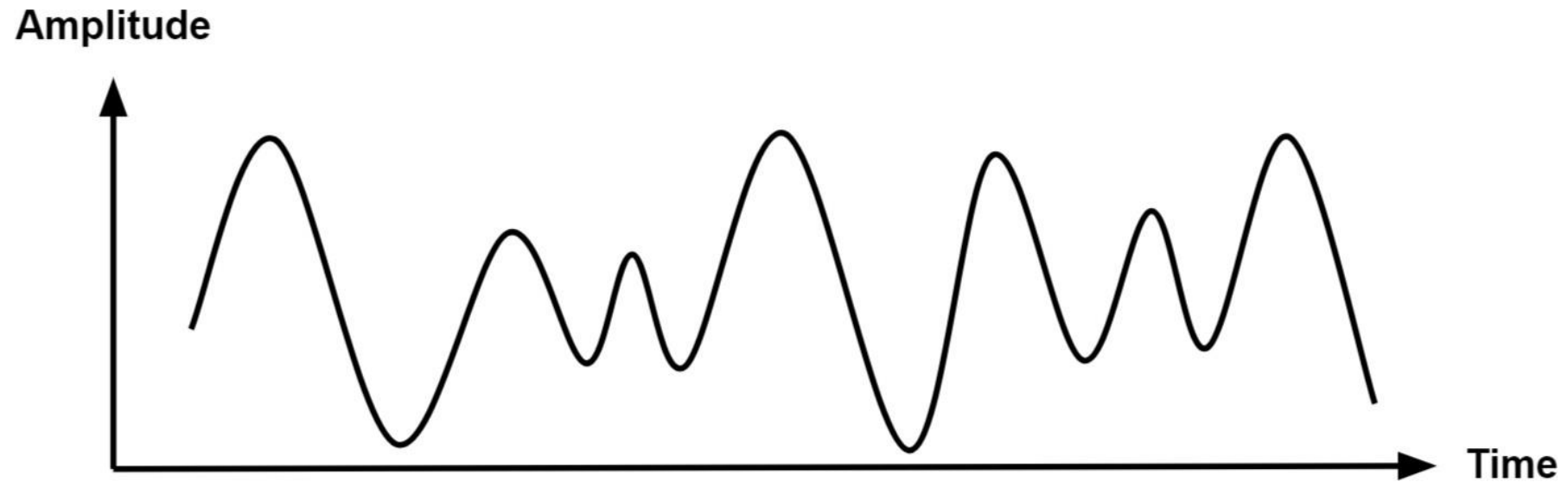


**1.Signal** – electrical voltage or current which varies with time and is used to carry message or information from one point to another.

**2.Output Transducer** – placed at the receiver which converts the electrical signal into the original message.

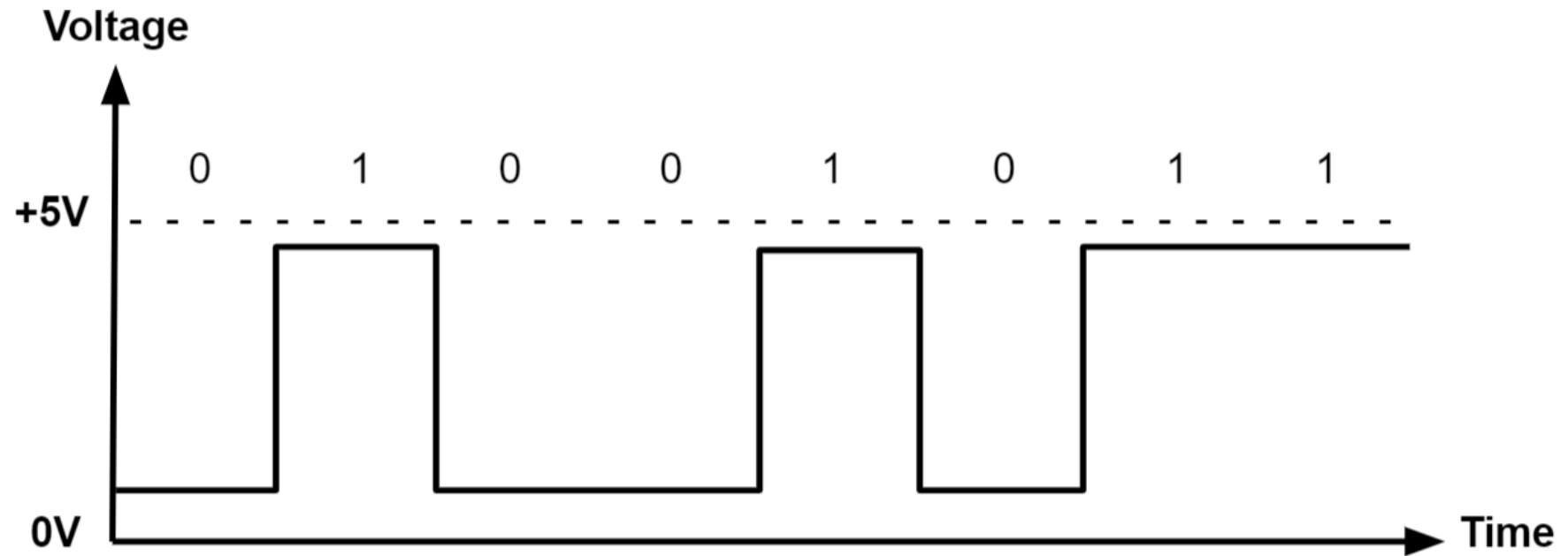


# ANALOG SIGNAL



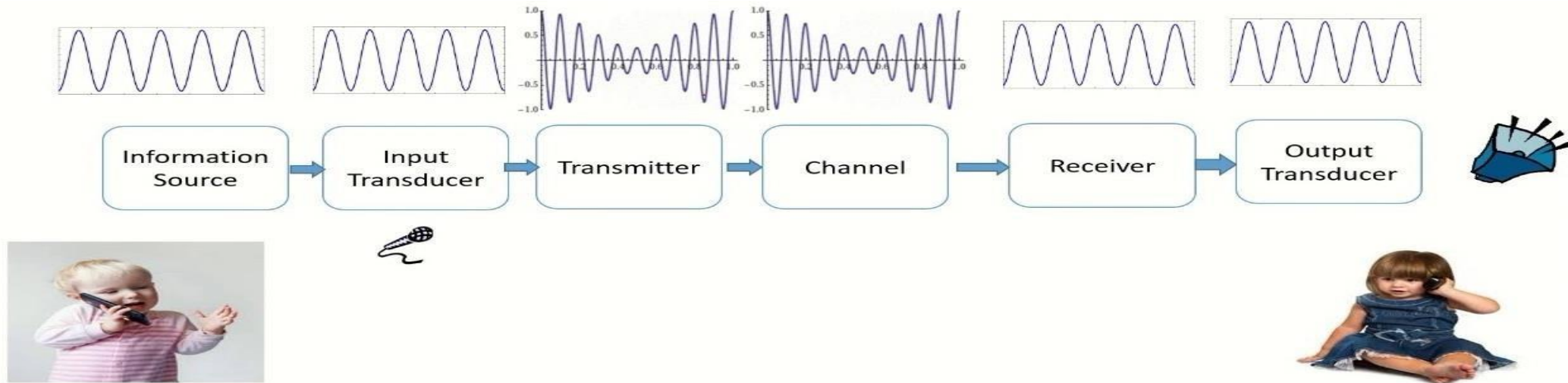


# DIGITAL SIGNAL





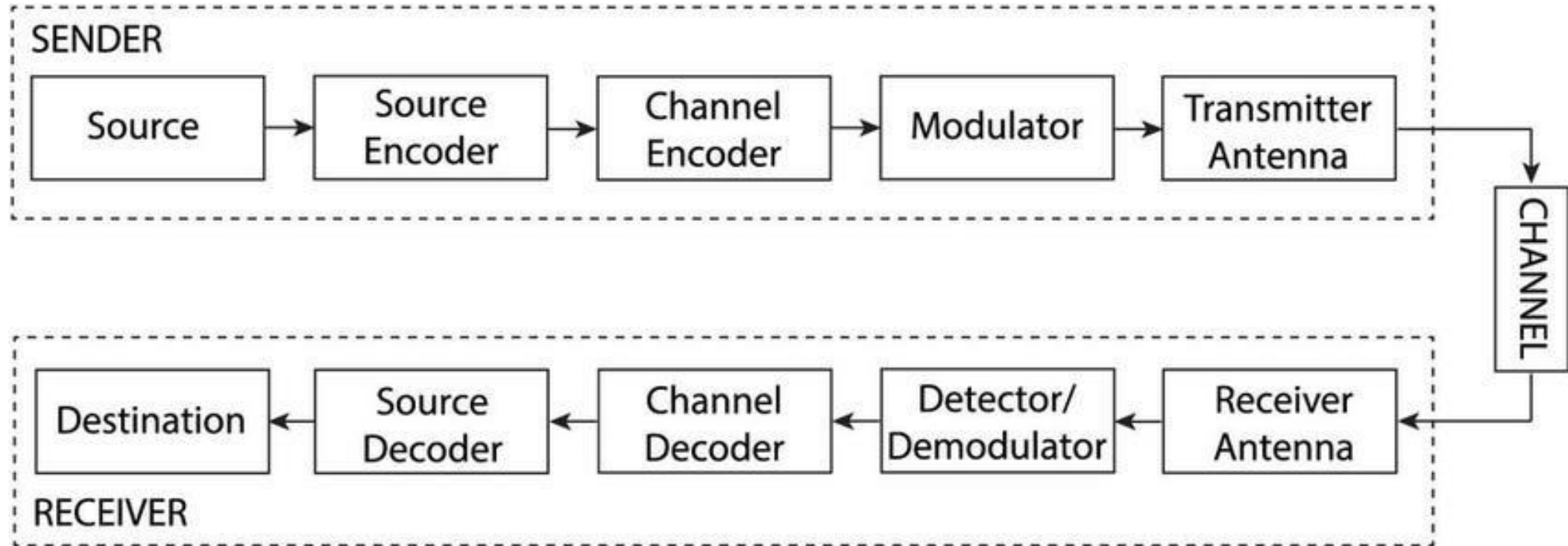
# BLOCK DIAGRAM- ANALOG COMMUNICATION SYSTEMS





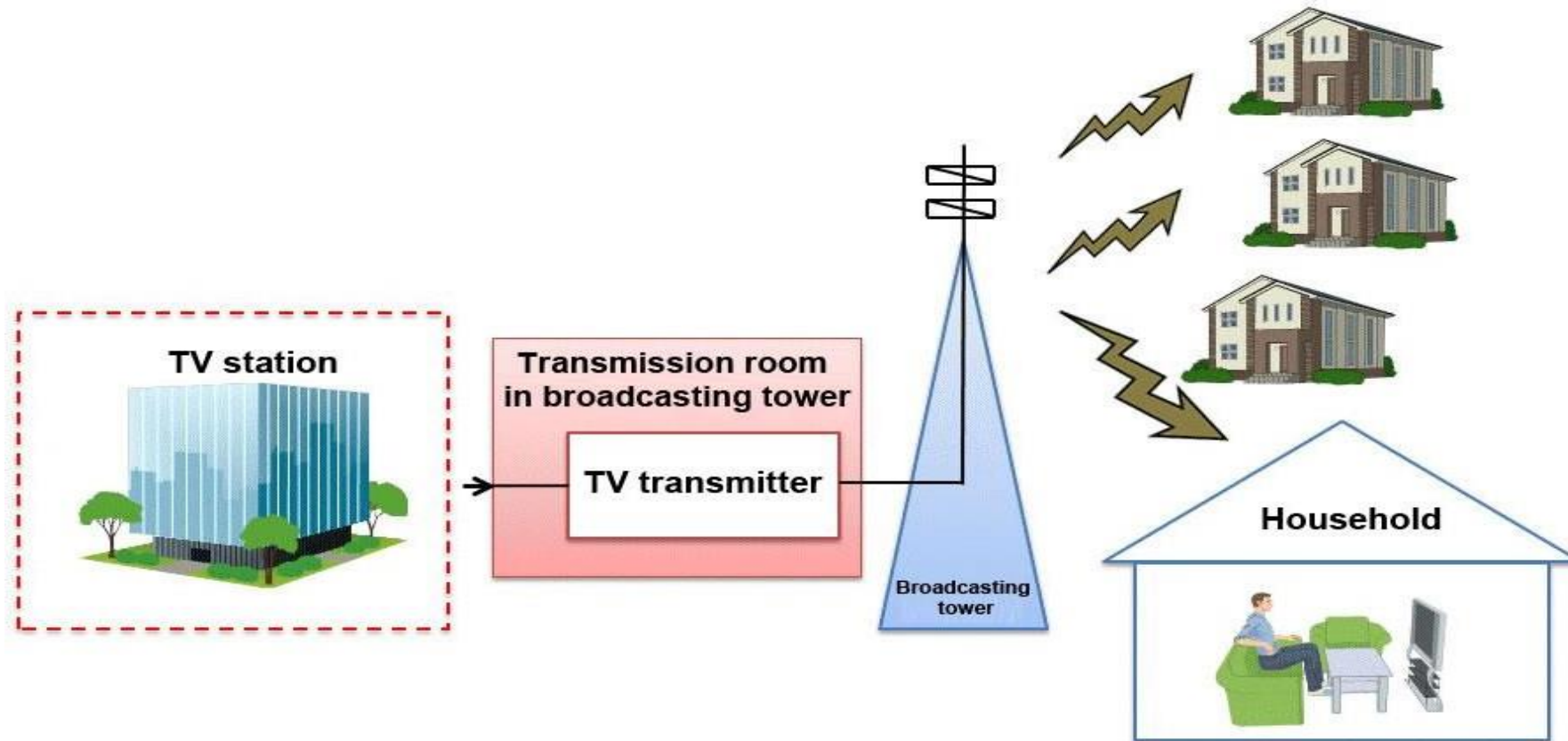


# BLOCK DIAGRAM- DIGITAL COMMUNICATION SYSTEMS



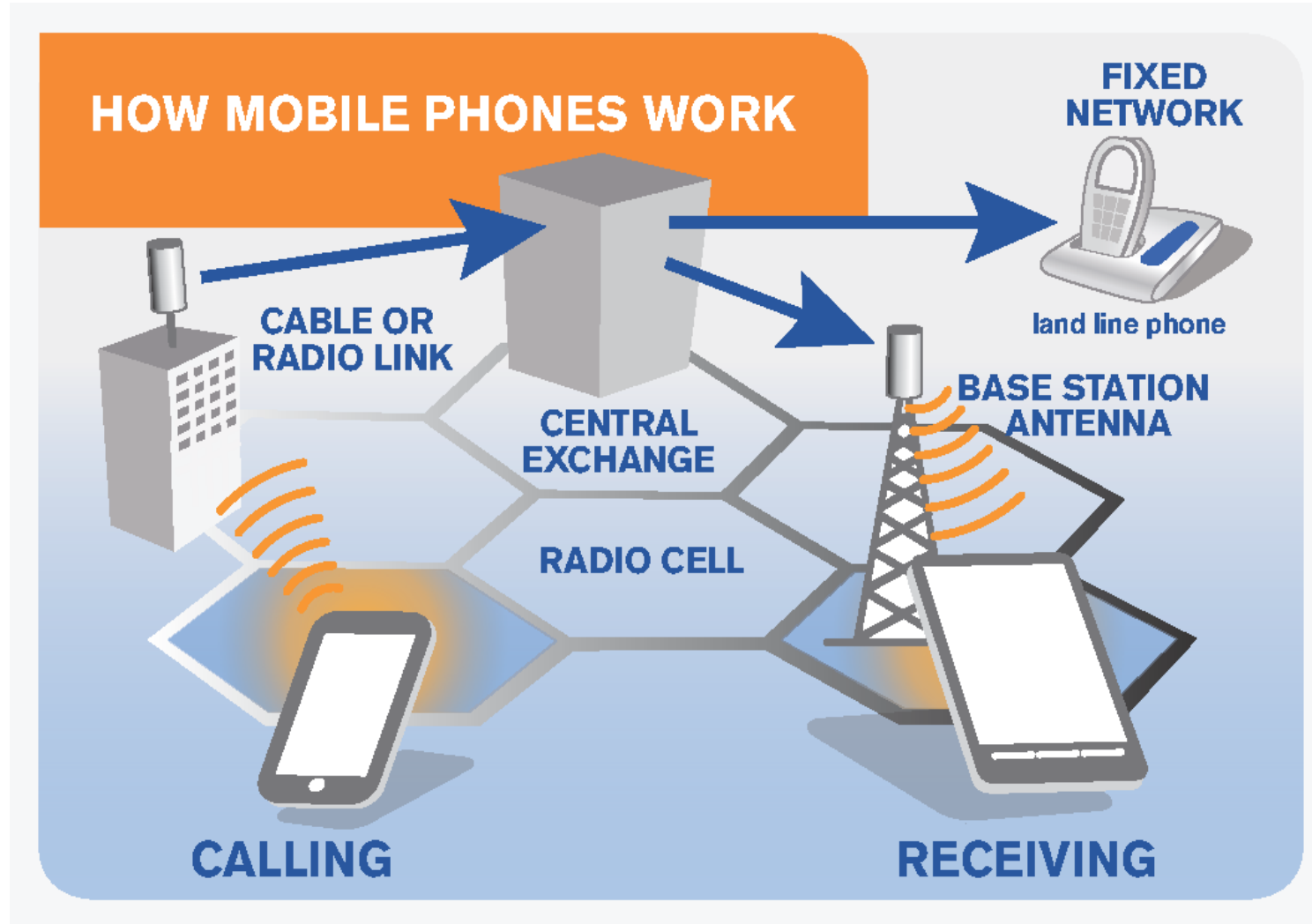


# FAMILIAR COMMUNICATION SYSTEMS





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# FAMILIAR COMMUNICATION SYSTEMS





# ACTIVITY



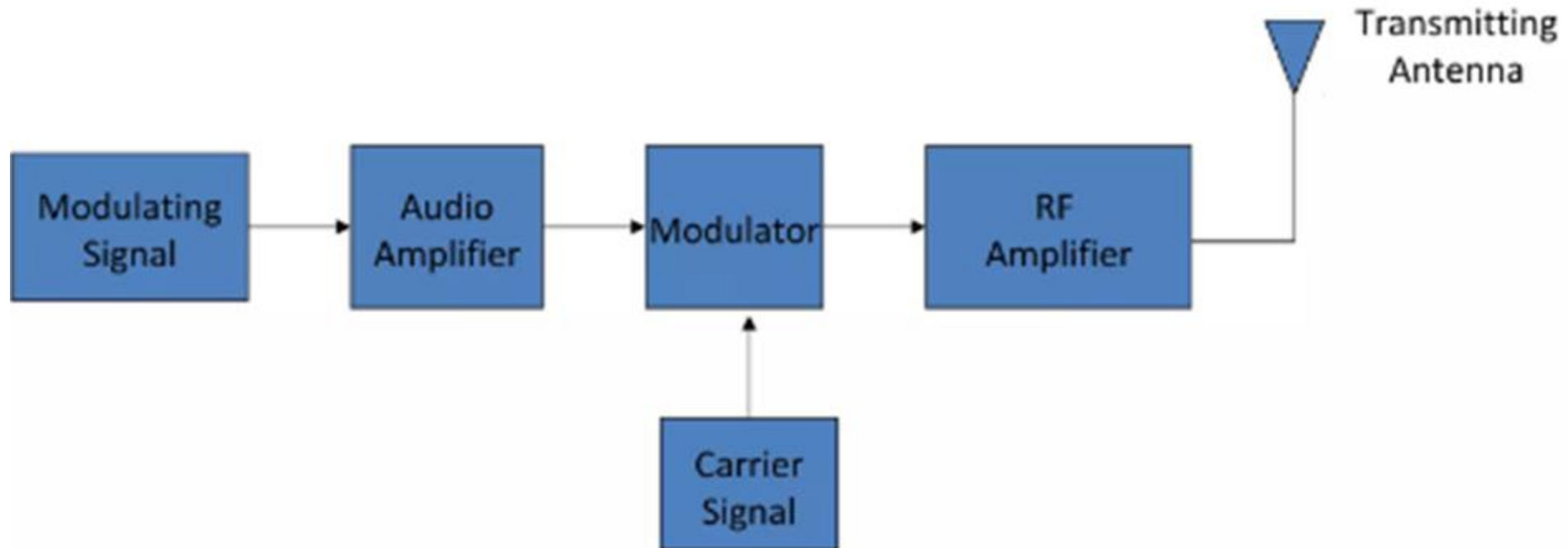
Take a case of two people talking over telephone. Use it to answer the questions asked



- 1) Discuss what the two people are doing.
- 2) In telecommunication between two people, one is a sender the other is a receiver. Using the figure above, identify the sender and the receiver.
- 3) Do you think the message being transmitted in the figure above is good or bad? Explain why.
- 4) When we communicate, we offer or receive different forms of information. Discuss different forms of information you know.
- 5) Describe the telephone being used in the figure.



# BLOCK DIAGRAM-TRANSMITTER





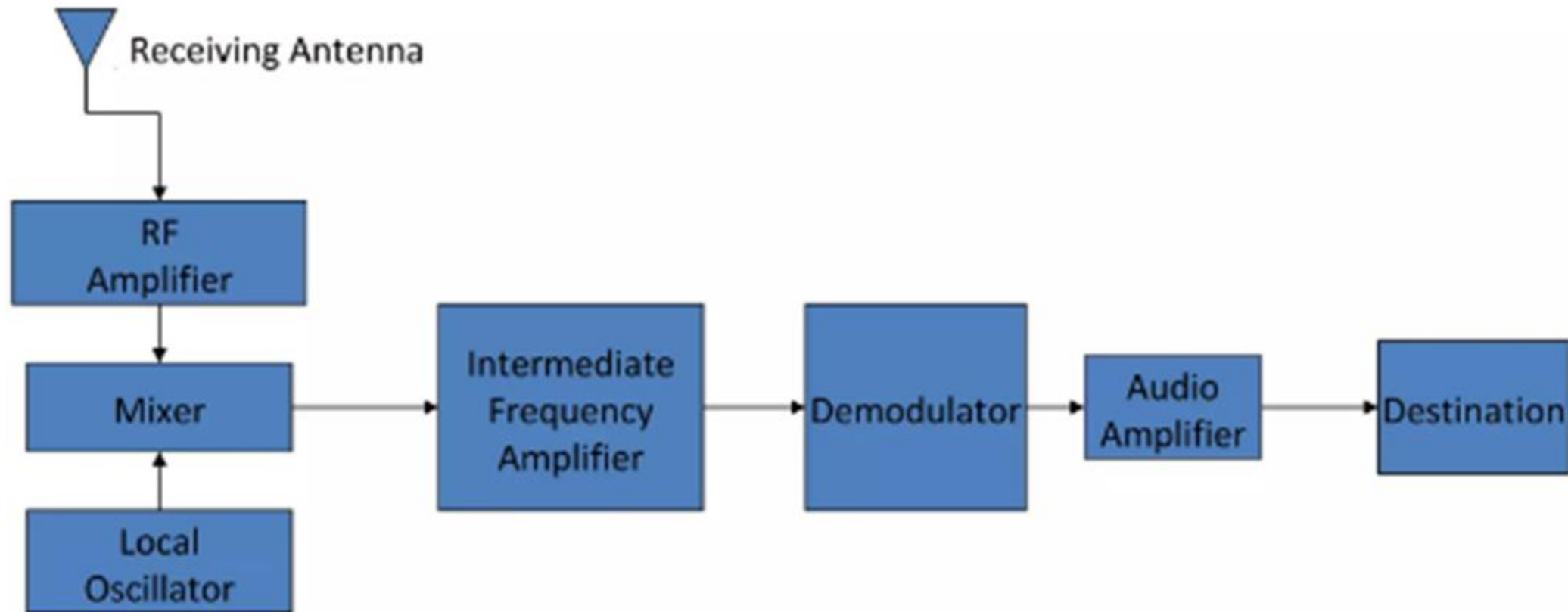
# BLOCK DIAGRAM-TRANSMITTER



- The link or path over which information flows from the source to destination.
- Many links combined will establish a communication networks.
- There are 5 criteria of a transmission system;
  - 1.Capacity
  - 2.Performance
  - 3.Distance
  - 4.Security
  - 5.Cost which includes the installation, operation and maintenance.
- The two main categories of channel that commonly used are; line (guided media) and free space (unguided media).



# BLOCK DIAGRAM-RECEIVER







# BLOCK DIAGRAM-RECEIVER

## Receiver:

- Receives the electrical signals or electromagnetic waves that are sent by the transmitter through the channel. It is also separate the information from the received signal and sent the information to the destination.
- Basically, a receiver consists of several stages of amplification, frequency conversion and filtering.
- Destination is where the user receives the information, such as loud speaker, visual display, computer monitor, plotter and printer.
- RF Amplifier Mixer Local Oscillator Intermediate Frequency Amplifier Demodulator Audio Amplifier Destination Receiving Antenna



# ASSESSMENT



- 1.What is meant by Communication?
- 2.Differentiate analog and digital signal.
- 3.What is the role of transducer in communication?



# THANK YOU