

16. COMMUNICATION SYSTEM

IMP DEFINITIONS & FORMULAS

1. Basic blocks communication system:

- i) Transmitter
- ii) Medium (or) Channel
- iii) Receiver

2. Frequency range of speech signals:

300 Hz to 3100 Hz. Its bandwidth is 2800 Hz.

3. Frequency band of AM broadcast:

540 - 1600 kHz

4. Frequency band of TV broadcast:

54 - 890 MHz

5. Frequency band of Mobile Phone broadcast:

840 - 935 MHz

6. Frequency band of Satellite communication:

3.7 GHz - 6.4 GHz

7. The waves of frequencies less than 2 MHz that can slide on ground are called **ground waves**.

8. The waves of frequencies from 3 MHz to 30 MHz are reflected by ionosphere in the atmosphere and are called **sky waves**.

9. The waves of frequencies from 30 MHz to 300 MHz are called **space waves**. They can also travel in space along line of sight (LOS).

10. Space wave communication is used in mobile phones, TV broadcast, radar microwave links and also in Satellite communication.

11. **Modulation**: It is the process of attaching 'low frequency message signal' to 'high frequency carrier wave'.

12. Three types of Modulation:

- 1) Amplitude modulation (AM)
- 2) Frequency modulation (FM)
- 3) Phase modulation (PM)

BULLET MASTER'S

PHYSI BEATS!



16) COMMUNICATION SYSTEM [1VSAQ]

Most Imp. VSAQ: Modulation

- World లో ఎక్కడెక్కడో Electronic Data form లో Store అయిన రకరకాల Documents, Photos, Audios, Videos క్షణాల్లో మన ముందుకు ఉంచే Internet System: WWW



- Hi, Hello అనే Mobile phone పలకరింపులు, FM Radio లో వచ్చే Super Hit Songs వినాలంటే **30 MHz to 300MHz** Range లో ఉండే **Space waves** కావాలి.
- ఇంట్లో కూర్చొని దూర ప్రాంతాలలో, విదేశాలలో జరిగే క్రికెట్ మ్యాచ్ లను క్షణాల్లో లైవ్ లో చూపించే T.V.లకు, వివిధ వార్తలు వినిపించే రేడియోలకు కావల్సినవి **3 MHz to 30MHz** లో ఉండే **Sky waves**.
- **MODULATION**: మనం మాట్లాడే Speech Signals కు కొంచెం Low frequency ఉంటుంది. సుదూర ప్రాంతాలకు పంపించే Electromagnetic Carrier waves కు చాలా high frequency ఉంటుంది. Low frequency speech signals ను high frequency carrier waves attach చేయడమే **Modulation**.

IPE View

IMP VSAQ: Modulation, Methods of Modulation, Skywave propagation, Communication used in Mobile Phones