

Chapter-15

Communication systems -1 mark Questions

- 1) What are the three main units of a Communication System?
- 2) What is meant by Bandwidth of transmission?
- 3) What is a transducer? Give an example.
- 4) Why is it necessary to use satellites for long distance TV transmission?
- 5) What is the frequency range of audio waves?
- 6) What is the function of demodulator?
- 7) What is a carrier wave?
- 8) What is a ground wave?
- 9) What is a sky wave?
- 10) Which type of communication uses discrete and binary coded version of signal?
- 11) What should be the length of the dipole antenna for a carrier wave of wavelength ' λ '?
- 12) What is a space wave?
- 13) What are microwaves? What is their use?
- 14) What type of modulation is required for radio broadcast?
- 15) What type of modulation is required for Television broadcast?
- 16) Which device is used for transmitting TV signals over long distances?
- 17) Name any one advantage of digital signal over analog signal?
- 18) What is modulation index of an AM Wave?
- 19) What are different modes of line of communication?
- 20) What is an digital signal?
- 21) What is an analog signal?

- 22) What is a range in a communication system?
- 23) Name the device which generate Radiowaves of constant amplitude?
- 24) What is the frequency range for space wave propagation?
- 25) Which layer of atmosphere reflects Radio waves back to Earth?
- 26) What is meant by Attenuation?
- 27) What is the function of a Repeater in a Communication system?
- 28) What is noise in a Communication system?
- 29) What is meant by Amplification of a signal?
- 30) What are the different types of Communication?
- 31) Define line-of-sight (LOS) Communication.
- 32) Name the three groups into which the propagating electromagnetic waves are classified.
- 33) What is meant by phase Modulation?

Two or three marks questions

- 34) Give the block diagram representation of communication system?
- 35) Draw frequency spectrum of the amplitude modulated signal.
- 36) Give the block diagram of Transmission of Amplitude Modulated signal.
- 37) Give the block diagram of a Receiver.
- 38) Give the block diagram for AM signal detector.

Answers - Solutions

- 1) a) Transmitter
b) Transmission channel
c) Receiver.
- 2) It is the frequency range with in which a transmission is made.
- 3) It is a device which converts one form of energy into another. Ex: A microphone, speaker etc.
- 4) TV signals being of high frequency are not reflected by ionosphere. Hence satellites are used.
- 5) 20Hz to 20Khz
- 6) To recover the original modulating signal.
- 7) It is a high frequency wave which carries the information or signal.
- 8) The radio waves propagating from one place to another following the Earth's surface are called ground waves.
- 9) It is a mode of Communication, which uses ionosphere as a reflector for propagation.
- 10) Digital Communication
- 11) The size of the dipole antenna should be $\frac{1}{4}^{\text{th}}$ of the wavelength.
- 12) Radiowaves having high frequencies are basically called as space waves.
- 13) Microwaves are electromagnetic waves of wavelength range 1mm to 3cm, they are used in space-communication.
- 14) Amplitude modulation.
- 15) Frequency modulation.
- 16) Communication satellite
- 17) They are relatively Noise-free and error free.

18) $\mu = \frac{A_m}{A_c}$

A_m = Amplitude of modulating wave.

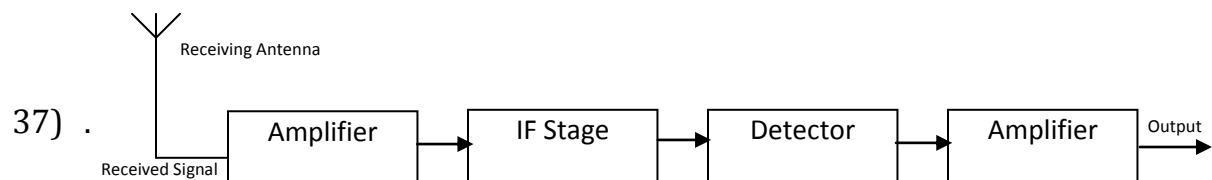
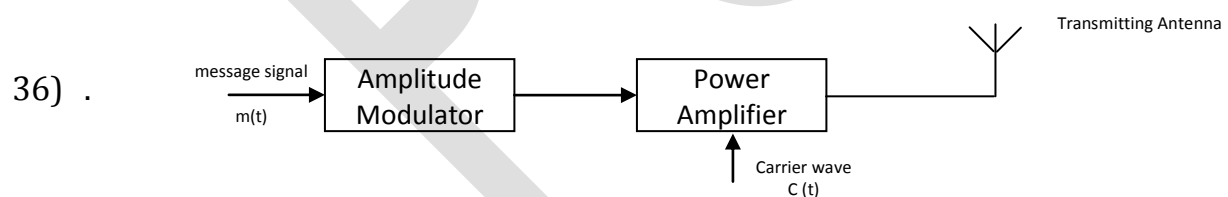
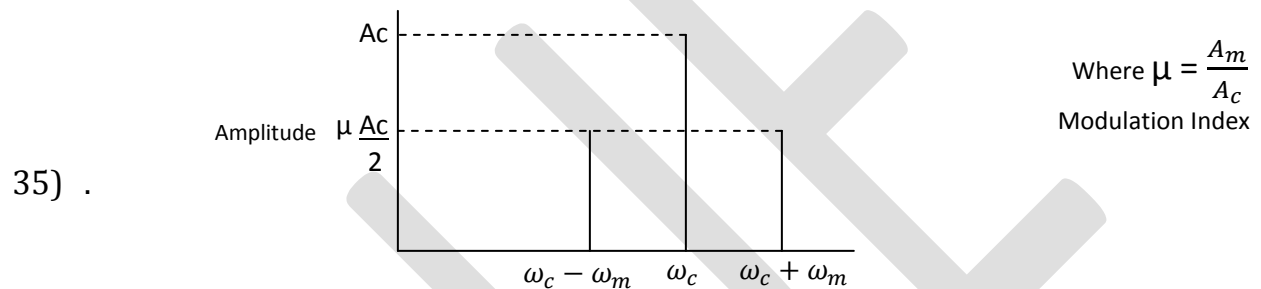
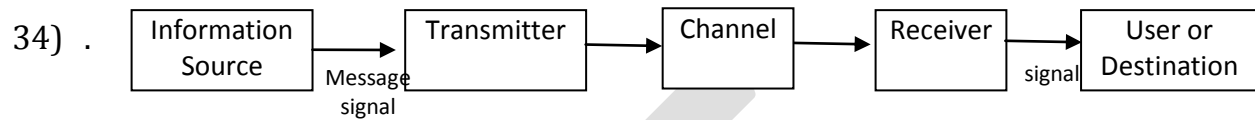
A_c = Amplitude of Carrier wave.

- 19) a. Two wire transmission lines.
b. Coaxial cables
c. Optical fibers.
- 20) It is a discontinuous and discrete signal having binary variations 1 and 0 with time.
- 21) It's an electrical signal which varies continuously with time.
- 22) It is the largest distance between the source and the destination upto which the signal is received with sufficient strength.
- 23) Oscillator
- 24) UHF (> 40MHz)
- 25) Ionosphere
- 26) It refers to loss of strength of a signal during propagation of a signal.
- 27) It extends the range of communication.
- 28) The unwanted signal is called a noise in a communication system.
- 29) It is the process of raising the strength of a signal.
- 30) a. Point-to-point Communication and
b. Broadcast.
- 31) If the signal (transmitted wave) travels the distance between the transmitter and receiver antenna in a straight line, then such a type of communication is known as LOS Communication.
- 32) a. Ground waves.

b. Sky waves

c. Space waves

33) If the phase of the carrier wave changes in accordance with the phase of the message signal, then the modulation is known as phase modulation.



38) .

