GURU TEGH BAHADUR INSTITUTE OF TECHNOLOGY
ANALOG COMMUNICATION

3RD SEMNESTER, ECE

QUESTION BANK OF ANALOG COMMUNICATION

1. Communication is the process of
(a) Keeping in touch
(b) Braodcasting
(c) Exchanging information
(d) Entertainment by electronics

2. Two key barrier to human communication are
(a) Distance
(b) Cost
(c) Ignorance
(d) Language

3. The higher modulating frequency used in AM broadcast system is
(a) 10 KHz
(b) 15 KHz
(c) 5 kHz
(d) 2 MHz

4. The higher frequency (HF) range extends from
(a) 300-3000KHz
(b) 3-30 KHz
(c) 30-300 MHz
(d) 3000-30000MHz

5. The Very high frequency (VHF) range extends from
(a) 300-3000KHz
(b) 3-30 KHz
(c) 30-300 MHz
(d) 3000-30000MHz

6. The ultra high frequency (UHF) range extends from
(a) 300-3000KHz
(b) 3-30 KHz
(c) 30-300 MHz
(d) 3000-30000MHz

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7. Radio signals are made up of
(a) voltage and current
(b) electric and magnetic fields
(c) electrons and protons
(d) noise and data

8.The communication medium causes the signal to be
(a) amplifier
(b) modulated
(c) attenuted
(d) interferrred with

9. The function of the input transducer in a communication system is
(a) to transmit the message signal
(b) to modulate the message signal
(c) to convert message sound signal into electrical signal
(d) none of the above

10. Which of the following is not a major communication medium
(a) free space
(b) water
(c) wires
(d) fibber optics cable

11. The process of trnsmitting two or more information signals simultaneously over the same channel is called
(a) multiplexing
(b) telemetry
(c) detection
(d) modulation

12. In amplitude modulation
(a)The amplitude of carrier varies in accordance with the amplitude of the modulating signal
(b)The modulating frequency lies in the audio range
(c)The amplitude of the carrier remains constant
(d)The amplitude of the carrier varies in accordance with the frequency of the modulating signal

13. A carrier is simultaneously modulated by two sine waves having modulation Indices of 0.4 and 0.3-. The total modulation index will be
(a) 0.1
(b) 0.7
(c) 0.5
(d) 0.35

14. In AM the total modulation index must not exceed unity or else
(a) The system will fail
(b) Distortion will result
(c) Amplifier will be damaged
(d) Resonant waves will be generated

15. A 400 W carrier is modulated to a depth of 75 percent The total power in modulated wave will be
(a) 385.5 W
(b) 400 W
(c) 512.5 W
(d) 615.5 W

16. The percentage saving in power of 100% modulated suppressed carrier AM signal is
(a) 100
(b) 75
(c) 66.7
(d) 50

17. In amplitude modulation, the modulation index lies between
(a) –1 and 1
(b) 0 and 1
(c) 1 and infinity
(d) -∞ and + ∞

18. The bandwidth required for amplitude modulation is
(a) Half the frequency of modulating signal
(b) Equal to the frequency of modulating signal

(c) Twice the frequency of modulating signal
(d) Four times the frequency of modulating signal

19. In a single side band suppressed carrier AM system the modulation index is changed from 0 to 1, the power content of the signal
(a) Will be quadrupled
(b) Will be doubled
(c) Will increase by 50 percent
(d) Will increase by 25 percent

20. In modulation "carrier" is
(a) Resultant wave
(b) Speech voltage to be transmitted
(c) Voltage with constant frequency phase or amplitude
(d) Voltage for which frequency, phase or amplitude is varied

21. In amplitude modulation the magnitude of side bands is
(a) ma/2 times the carrier
(b) ma times the carrier amplitude
(c) 2ma times the carrier amplitude
(d) 4ma times the carrier amplitude

22. For a low level AM system the amplifiers following the modulated stage must be
(a) Linear devices
(b) Harmonic devices
(c) Class C amplifier
(d) Non linear devices

23. When Ec & Em are the peak values of modulating & carrier voltages respectively, the Modulating index is given by
(a) Em/Ec
(b) Ec/Em
(c) Em Ec
(d) None of the above

24. In an amplitude modulated wave, the amplitude of the side band is

(a) Independent of the carrier amplitude
(b) Independent of the modulation index
(c) Carrier amplitude X modulation index
(d) ½ carrier amplitude X modulation index

25. Noise which assumes great importance is
(a) Flicker noise.
(b) Johnson noise
(c) Transit time noise
(d) Shot noise
26. For TV broadcast, picture signal is modulated in
(a) SSB
(b) VSB
(c) FM
(d) AM

27. Oscillator crystal is made of
(a) Silicon
(b) Germanium.
(c) Diamond.
(d) Quartz.

28. Low level AM transmitter
(a) Uses classC
(b) Requires higher audio power
(c) Has poor efficiency
(d) High efficiency

29. For AM which is true
(a) It obviates the use of antenna
(b) It reduces the band width
(c) It ensure transmission over long distance

30. The function of the modulator is to
(a) Separate two frequencies
(b) Extract information from the carrier
(c) Amplify the AF signal
(d) Impress the information on to a carrier

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31. In AM, pilot carrier transmission has
(a) Two side bands
(b) Two side bands & a trace of carrier
(c) Carrier & a part of other side band
(d) Carrier, one side band & part of the other side band

32. Which type of modulator amplifier is used in AM transmitter?
(a) Class A
(b) Class B
(c) Class AB
(d) Class C with negative feed back

33. Under ordinary circumstances, impulse noise can be reduced in
(a) FM only
(b) AM only
(c) Both AM & FM
(d) None of the above

34. FM broadcast is done using
(a) Medium waves
(b) Short waves
(c) VHF & UHF waves
(d) Microwaves

35. Armstrong modulator generates
(a) AM signals
(b) FM signals
(c) PM signals
(d) Both (b) & (c)

36. In case of FM, modulating voltage remaining constant if the modulating Frequency is lowered, then
(a) Amplitude of the distant side bands decreases
(b) Amplitude of the distant side bands increases
(c) Amplitude of the distant side bands remains constant
(d) Amplitude of the distant side bands first increases then decreases

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37. The modulation index of narrow band FM signal is
(a) Nearly equal to unity
(b) Much less than unity
(c) Nearly 0.5
(d) Much more than unity

38. A pre emphasis circuit provides extra noise immunity by
(a) Converting the phase modulation of FM
(b) Pre amplifying the whole audio band
(c) Amplifying the higher audio frequencies
(d) Boosting the pass frequencies

39. In an FM signal, as the modulation index increases, the power
(a) Increases
(b) Decreases
(c) Remains constant
(d) None of the above

40.Narrow band FM signal can be considered to be equal
to
(a) PM
(b) AM
(c) SSB
(d) DSB

41. For FM, which of the following statement is not true?
(a) The bandwidth increases as modulation index is increased
(b) The total power remains constant with respect to modulation index
(c) The carrier never becomes zero
(d) All of the above

42. In FM, the frequency deviation is
(a) Always constant
(b) Directly proportional to modulating frequency
(c) Inversely proportional to modulating frequency
(d) Proportional to amplitude of modulating signal

43. The disadvantage of FM over AM is that

(a) High output power is needed
(b) High modulation power is needed
(c) Noise is very high for high frequency signals
(d) Large bandwidth is required

44. Which of the following statement is correct?
(a) Pre- emphasis circuits are used in AM transmitters
(b) FM reception is noise free as compared to AM
(c) A limiter state is also used in receivers
(d) Discriminator is used for the detection of AM signals

45. As compared to AM transmitters, FM transmitters are
(a) Less efficient
(b) More efficient
(c) Less costly
(d) Equally efficient

46. The difference between phase and frequency modulation
(a) Is purely of academic interest
(b) Lies in the different definitions of the modulation index
(c) Lies in the poor audio response of phase modulation
(d) Is too great to make the two systems compatible

47. Which of the following statement is correct?
(a) In India picture signals of a TV receiver are frequency modulated
(b) Plate modulation circuits have plate circuit efficiency
(c) In AM the amplitude of the carrier wave is varied in accordance with the frequency of the modulation signal
(d) In India, sound signals of a TV receiver are amplitude modulated

48. FM has
(a) Two sidebands only
(b) Four sidebands only
(c) Eight sidebands only
(d) Infinite sidebands

49. A FM discriminator
(a) Filters carrier signal
(b) Converts FM into AM

(c) Converts AM into FM
(d) Converts FM into PM

50. In FM noise can be further reduced by
(a) Increasing deviation
(b) Reducing deviation
(c) Reducing carrier frequency
(d) Increasing carrier amplitude

51. In a FM receiver, amplitude limiter
(a) Amplifies low frequency signals
(b) Reduces the amplitude of signals
(c) Eliminates any change in the amplitude of the received

52. Which of the following is an indirect way of generating FM?
(a) Armstrong modulator
(b) Varactor diode modulator
(c) Reactance FET modulator
(d) Reactance BJT

53. FM consists in
(a) Varying amplitude & frequency of carrier
(b) Varying amplitude of the carrier
(c) Varying frequency of the carrier
(d) Carrier frequency remains constant

54. In FM, increased depth of modulation increases
(a) Modulation
(b) Modulation index
(c) Bandwidth
(d) All of the above

55. Modulation is a process of
(a) Generating constant frequency waves
(b) Combining audio & radio waves at transmitting end
(c) Reducing distortion at the RF amplifiers
(d) Improving thermal stability of a transistor

56. The main function of balanced modulator is to

(a) Produce balanced modulation of a carrier wave
(b) Produce 100% modulation
(c) Suppress carrier
(d) Limit noise picked by the carrier

57. In commercial T.V. Transmission in India, piture and speech signal are modulated respectively as
(a) VSB and VSB
(b) VSB and SSB
(c) VSB and FM
(d)FM and VSB

58. The pre-emphasis circuit is used
(a) Prior to modulation
(b) After demodulation
(c) For low frequency components of the signal
(d) None of the above

59. A de-emphasis circuit is used
(a) Prior to demodulation
(b) After demodulation
(c) To emphasise -the magnitude of low frequency components
(d) To boost the magnitude of high frequency components