3rd Sem / Branch : Electronics & Communication Engg./IC/Power Eltx/Elect./Eltx.Engg.

Subject:- Principles of Communication Engineering

Time : 3Hrs.   M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory   (10x1=10)

Q.1   For efficient transmission and reception of electromagnetic signal ,the height of antenna should be equal to
a)   Half wavelength   b)   One wavelength
c)   Quarter wavelength d)   one third wave length

Q.2   The most power consuming component of AM wave is
a)   Carrier   b)   Modulating signal
c)   Lower sideband   d)   Upper sideband

Q.3   The balanced modulator produces
a)   SSB   b)   DSB-FC
c)   DSB-SC   d)   None of above

Q.4   The range of modulation index in Am is
a)   0 to 1   b)   1 to 100
c)   1 to 1000   d)   None of above

Q.5   In Fm , the frequency deviation is proportional to
a)   Modulating frequency
b)   Amplitude of modulating frequency
c)   Carrier frequency
d)   None of above

Q.6   FM modulator is uses to generating
a)   AM signal   b)   FM signal
c)   PM signal   d)   PAM signal

Q.7   In which multiplexing technique synchronization is required
a)   FDM   b)   TDM
c)   VSB   d)   None of above

Q.8   Square law modulators utilizes
a)   Linear range of the V-1 characteristic of diode
b)   Linear range of the V-1 characteristic of a triode
c)   Non-linear region of V-1 dynamic characteristics of diode
d)   Non-linear region of V-1 dynamic characteristic of a triode

Q.9   The function of FM detector is to detect
a)   Modulating signal   b)   carrier signal
c)   Modulated signal   d)   All of above

Q.10 The Modulated index of PM signal is .
a)   Proportional to modulating frequency
b)   Proportional to reciprocal of modulating frequency
c)   same as in FM
d)   Proportional to phase of modulating signal.

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Varactor diode modulator is _____ method of FM generation.

Q.12 In pulse position modulation, the amplitude and frequency of pulse is kept constant. (T/F)

Q.13 FM modulator is used for generating _____ (AM/FM signals)

Q.14 The bandwidth of AM signal is _____.

Q.15 Is it possible to obtain FM from PM.

Q.16 The foster-seeley discriminator is use for FM detection (T/F)

Q.17 Base modulator are used for low power requirement (T/F)

Q.18 In FM, the significant sideband increases with increase of frequency. (T/F)

Q.19 In AM, both sideband have same information.(T/F)

Q.20 ISB stands for _____

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 What is modulation and why it is required ? Explain

Q.22 What is the function of transmitter in the communication system.

Q.23 Explain the following terms
a)   modulated signal
b)   Demodulated signal

Q.24 Explain the basic concept of frequency division multiplexing.

Q.25 Explain the block diagram of indirect method of FM generation.

Q.26 Compare the base modulator and collector modulator.

Q.27 Explain the Carson's rule.

Q.28 Write a note on DSB-SC modulation system.

Q.29 What do you understand by ratio detector method of FM detection?

Q.30 Explain phase modulation in brief.

Q.31 Explain the role of limiter in FM modulation.

Q.32 Write a short note on pre-emphasis in frequency modulation.

Q.33 What do you mean by diagonal clipping?

Q.34 Explain the modulation index in AM signal and derive the equation of modulation index.

Q.35 State the sampling theorem and sampling frequency for pulse modulation.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the Reactance FET modulator.

Q.37 Derive a expression for an amplitude modulated wave. Also draw the waveforms.

Q.38 Write a short note on following:
a)   PAM
b)   PWM