Q.24 Explain the basic concept of time division multiplexing.
Q.25 Explain in the detail the varactor diode modulator.
Q.26 Compare the base modulator and collector modulator.
Q.27 Explain the frequency spectrum of FM wave.
Q.28 Write a note on SSB-SC Modulation system.
Q.29 What do you understand by phase locked loop FM detector.
Q.30 What do you mean by frequency modulation. Also draw the waveforms.
Q.31 Compare the FM and AM communication systems.
Q.32 Explain the narrow band FM and wide band FM.
Q.33 Discuss the Balanced modulator.
Q.34 Explain the modulation index in AM signal.
Q.35 Explain the statement of sampling theorem.

SECTION-D

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

Q.36 Draw and Explain the block diagram of Armstrong phase modulator.
Q.37 Derive a expression for an amplitude modulated wave. Also draw the waveforms.
Q.38 Explain the different types of pulse modulation along with waveforms.

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3rd Sem / Eltx, 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 Modulator is a device used to
a) Separate two frequencies
b) Amplify the audio signals
c) Superimpose two low and high frequency signal
d) None of above

Q.2 Vestigial sideband is most commonly used in.
a) Radio transmission b) TV transmission
c) Telephony d) All of above

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 Which one is not the advantage of FM over AM.
a) Lower bandwidth is required
b) Better noise immunity is there
c) Less modulating power is required
d) The transmitted power is more useful

Q.6 Which method is an example of an indirect FM generation

a) Reactance FET modulator
b) Varactor diode modulator
c) Armstrong phase modulator
d) Reactance tube modulator

Q.7 Indicate which of the following system is not analog in nature
a) Pulse position modulation
b) Pulse Amplitude modulation
c) Pulse width modulation
d) Pulse code modulation

Q.8 Linear diode detector utilizes
a) Linear portion of the dynamic characteristic of diode
b) Square law portion of the dynamic characteristic of diode
c) Rectifier property of the diode

Q.9 The basic elements of phase locked loop FM demodulator is
a) Voltage controlled oscillator
b) Multiplexer
c) Low pass filter
d) All of above

Q.10 The modulation 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 Reactance modulator is_____ method of FM generation

Q.12 What do you mean by sampling.

Q.13 Carrier signal is a high frequency signal.(T/F)

Q.14 The process by means of which information is extracted from the modulated signal is called_____

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

Q.16 The electronic circuit that performed the demodulation are called_____

Q.17 Collector 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, all the information can be conveyed by the use of one sideband only. (T/F)

Q.20 SSB-SC stands for_____

SECTION-C

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

Q.21 What is the need of modulation? Explain.

Q.22 Draw and explain the block diagram of modern communication system.

Q.23 Explain the following terms:
a) Modulating signal
b) carrier signal