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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 VHF range is _____.

a) 3-30 MHz b) 30-300 MHz
c) 30-3000 MHz d) 30-300 kHz

Q.2 In frequency modulation which characteristics of carrier signal is varied according to modulating signal

a) Amplitude b) Phase
c) frequency d) None

Q.3 Modulation index of AM is

a) $\frac{Vmax + Vmin}{Vmax - Vmin}$ b) $\frac{Vmax - Vmin}{Vmax + Vmin}$
c) $\frac{Vmin + Vmax}{Vmin - Vmax}$ d) $\frac{Vmin - Vmax}{Vmin + Vmax}$

Q.4 Bandwidth of AM signal is

a) fm/2 b) fm
c) 2fm d) fc

Q.5 De emphasis is used to alternate

a) Low frequency b) High frequency
c) Both (a) & (b) d) None of the above

Q.6 The drawback of FM over AM is that

a) High output power is needed
b) high modulating power is needed
c) Noise is very high
d) Large bandwidth is required

Q.7 In ratio detector

a) one diode is used b) two diodes used
c) three diodes used d) four diode used

Q.8 Sampling theorem is associated with

a) PCM b) FM
c) AM d) All of these

Q.9 The technique of separating the signals in time is called_____

a) FDM b) TDM
c) PAM d) PWM

Q.10 When no input signal is applied to PLL the output is

a) a sine wave
b) extremely low
c) zero
d) equal to source voltage

SECTION-B

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

Q.11 Demodulation is the process of _____ the modulating signal and carrier signal (mixing /separating).

Q.12 In amplitude modulation, the amplitude of the carrier remains constant. (True/False)

Q.13 In FM_____bandwidth is required than in AM (larger/smaller).

Q.14 De-emphasis circuit is used to alternate _____ frequencies.

Q.15 Modulation index of phase and frequency modulation are_____(same/different).

Q.16 Armstrong method of modulation is classified as _____ method. (Direct/Indirect)

Q.17 VCO stands for_____.

Q.18 PPM stands for_____.

Q.19 In PAM, pulse train acts as a carrier signal. (True/ False)

Q.20 Sampling theorem is used to determine minimum sampling speed. (True/False)

SECTION-C

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

Q.21 Write a short note on frequency translation and demodulation

Q.22 Give the derivation of expression for an amplitude modulated wave.

Q.23 Explain independent sideband system of modulation.

Q.24 Describe carson's rule

Q.25 Give comparison between AM & FM.

Q.26 What do you understand by Pre-emphasis and De-emphasis circuits.

Q.27 Describe Balanced Modulator with suitable diagram.

Q.28 Explain Time division multiplexing in detail.

Q.29 Describe Ratio Detector with circuit diagram.

Q.30 Explain the working of Reactance Modulator with circuit diagram.

Q.31 What do you understand by single slope detector describe its functions.

Q.32 Describe Pulse width modulation(PWM).

Q.33 Explain the effect of Noise on carrier in Frequency Modulation (Noise triangle).

Q.34 Explain the working of voltage controlled oscillator with suitable diagram.

Q.35 Write short note on maximum frequency deviation and capture effect.

SECTION-D

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

Q.36 Describe stabilization of carrier using Automatic frequency control (AFC) with block diagram.

Q.37 Explain DSB-SC system of modulation in detail.

Q.38 Explain basic principle and working of Foster Seeley Discriminator in detail with circuit diagram.