Q.26 Explain the sidebands components of AM.
Q.27 Describe Armstrong Method of FM Generation.
Q.28 What is effect of Modulation index on modulated AM signal.
Q.29 What are the advantages of FM over AM?
Q.30 What is phase modulation? Draw the waveform of PM Wave.
Q.31 Discuss the working of collector modulartor.
Q.32 Distinguish between AM & FM.
Q.33 Explain the feature of varactor diode modulator.
Q.34 Explain the working principle on which foster seelay discriminator circuit works.
Q.35 A 25 kw carrier wave is amplitude modulated at 60% dept modulation by sinusoidal modulating signal calculate the total power of AM wave.

SECTION-D

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

Q.36 Discuss the performance characteristics of radio receiver in detail.
Q.37 Draw the block diagram of reactance FET FM transmitter Explain the function of each block.
Q.38 Write short note on
1) Selection criteria for intermediate
2) Ratio detector.

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Sub. : Analog Communication System

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 In frequency modulation which characteristics of high frequency signal is changed according to the modulating signal
a) Amplitude b) Frequency
c) Phase d) None of the above

Q.2 The modulation index is given by _____.
a) $(V_{max} + V_{min}) / (V_{max} - V_{min})$
b) $(V_{max} - V_{min}) / (V_{max} + V_{min})$
c) $(V_{max} - V_{min}) / (V_{max} - V_{min})$
d) $(V_{max} + V_{min}) / (V_{max} - V_{min})$

Q.3 The maximum power efficiency of an AM modulator is _____
a) 25% b) 50%
c) 75% d) 100%

Q.4 The ratio of the total power in amplitude modulated wave to the unmodulated carrier power is given by _____.
a) $P_t/P_c = 1 + (m/2)$ b) $P_t/P_c = 1 - (m/2)$
c) $P_t/P_c = 1 + (m^2/2)$ d) $P_t/P_c = (1 + m)^{1/2}$

Q.5 In FM, the frequency deviation is proportional to _____.

a) Modulating frequency
b) Amplitude of modulating frequency
c) Carrier frequency
d) None of the above

Q.6 An oscillator whose frequency is controlled by a modulating voltage is knows as _____.

a) Armstrong oscillator
b) Colpitts' oscillator
c) VCO
d) Crystal oscillator

Q.7 Which of the following required the lease bandwidth?

a) DSB SC b) DSB
c) VSB d) SSB

Q.8 What are the disadvantages of using balanced slope detector for demodulation of FM signal?

a) The detector operates only for small deviation in frequency
b) Low pass filter of the detector produces distortion in the detection
c) Both A and B
d) None of the above

Q.9 Pre emphasis is done for _____.

a) Boosting of modulating signal voltage
b) In FM before modulation
c) Modulating signals at higher frequencies
d) All of the above

Q.10 Pre emphasis is done before_____

a) Before modulation
b) Before transmission
c) Before detection at receiver
d) After detection at receiver

SECTION-B

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

Q.11 Define phase modulation.
Q.12 Give two applications of communication.
Q.13 Define the term Fidelity.
Q.14 Give any two advantages of FM is communication.
Q.15 Name any two FM modulators.
Q.16 What is the use of de-emphasis circuit?
Q.17 Define the term "Sensitivity".
Q.18 What is the full form of DSB-SC?
Q.19 What is full duplex system?
Q.20 What is the full form of VSB?

SECTION-C

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

Q.21 What is effect of Modulation index on modulated AM signal.
Q.22 What is the need of modulation?
Q.23 What is Amplitude Modulation? Derive an expression for AM wave.
Q.24 What is working principle of Balanced Modulator.
Q.25 Compare phase modulation with frequency modulation.