

Assignment 2

- 1) Define AM and modulation index of AM?
- 2) Derive the Mathematical expression of AM ?
- 3) What is Total power of AM , derive with expression ?
- 4) What is the Effect of modulation index on AM?
- 5) Explain High level & Low level AM Modulation
- 6) Compare High level and low level modulation.
- 7) Explain generation of with neat diagram
 - i) DSBFC using diode
 - ii) DSBSC using Balance modulator
 - iii) SSBSC using Phase shift method
- 8) Explain AM demodulators with neat circuit diagram
 - i) Simple Diode detector
 - ii) Practical Diode detector
- 9) IF An amplitude modulated wave $X_c(t) = 10 (1 + 0.6 \cos 200\pi t + 0.4 \cos 400\pi t) \cos 2000\pi t$
 - 1) Sketch the amplitude spectrum of $X_c(t)$
 - 2) Find Total Power
 - 3) find side band power
 - 4) what is modulation index
- 10) A sinusoidal carrier has an amplitude of 10V and a frequency of 100KHz. It is amplitude modulated by a sinusoidal voltage of amplitude 3v and frequency 500Hz. Modulated voltage is developed across 75Ω resistance:
 - 1) Show the equation of modulated wave
 - 2) Determine modulation index
 - 3) Draw spectrum of modulated wave
 - 4) Calculate total average power
 - 5) Calculate the power carried by sidebands
- 10) A sinusoidal carrier has an amplitude of 20v and a frequency of 200KHz. It is amplitude modulated by a sinusoidal voltage of amplitude 6v and frequency 1KHz. Modulated voltage is developed across 80Ω resistance:
 - 1) Write the equation of modulated wave
 - 2) Determine modulation index
 - 3) Draw spectrum of modulated wave
 - 4) Calculate the total average power
- 11) A sinusoidal carrier has an amplitude of 20v and a frequency of 30KHz. It is amplitude modulated by a sinusoidal voltage of amplitude 3v and frequency 2KHz . Modulated voltage is developed across 50Ω resistance:
 - 1) Write the equation of modulated wave
 - 2) Calculate modulation index
 - 3) Draw spectrum of modulated wave