St.Joseph's College Of Engineering
Department of ECE
CS6304 ANALOG AND DIGITAL COMMUNICATION
Assignment -I
UNIT I: ANALOG COMMUNICATION
PART-A

1. **Define noise and noise figure.**
2. **Explain Thermal Noise and White Noise.**
3. **What is the need for modulation?**
4. **An unmodulated carrier is modulated simultaneously by three modulating signals with coefficients of modulation m1 = 0.2, m2 = 0.4, m3 = 0.5. Determine the total coefficient of modulation.**
5. **Define amplitude Modulation,frequency modulation.**
6. **Define Modulation index and percent modulation for an AM and FM wave.**
7. **What is over,under,critical modulation?**
8. **Distinguish between narrow band FM and wide band FM.**

PART-B

1. Obtain AM wave equation and explain each term with the help of frequency spectrum and also obtain an expression for its power.

2. Explain the mathematical analysis of angle modulated wave.

3. Compare AM, FM and PM systems.

4. An AM modulator has a carrier of 400 KHz with amplitude of 20v; modulating signal of 8 KHz with amplitude of 8.5v is applied. Determine

(a) Upper and lower side frequencies.
(b) Modulation coefficient and percent modulation
(c) Peak amplitude of the modulated carrier and upper and lower side frequency voltages.
(d) Maximum and minimum amplitude of the envelope.
(e) Expression of modulated wave.

Sketch the output spectrum and envelope.