

### **Assignment 3**

- 1) Define related to FM 1) modulation index 2) Frequency deviation 3) Deviation ratio
- 2) Explain Pre-emphasis and De-emphasis circuit used in FM.
- 3) Compare AM and FM
- 4) Explain FM generation methods
  - i) Varactor diode method
  - ii) FET Reactance method
  - iii) Armstrong method
- 5) Explain FM demodulators with neat circuit diagram
  - i) Balanced slope detector
  - ii) Foster seeley demodulator (Phase Discriminator)
  - iii) Ratio detector
- 6) A single tone FM signal is given by  $V_{FM} = 10 \sin (16 \pi \times 10^6 t + 20 \sin 2 \pi \times 10^3 t)$   
Calculate :
  - (a) Maximum frequency deviation
  - (b) BW of FM using Carsons rule