

BEC-252
ASSINGNMENT 3

1. What is communication system? Explain basic block of communication system.
2. Explain baseband and band-pass signals.
3. Explain modulation and need of modulation.
4. Explain Amplitude modulation and equation for this wave.
5. Draw the frequency domain relation of AM signal. Derive the power and current relation in AM.
6. The antenna current of AM transmission is 8A, if only the carrier is sent but it is increased to 8.93A and if the carrier is modulated by a single sinusoidal wave. Determine the modulation. Also find the antenna current if the percentage of modulation index changes to 0.8.
7. Derive the expression of modulation index in terms of maximum and minimum voltage.
8. Calculate the power saving in DSB-SC signal and SSB-SC signal.
9. What is vestigial side band modulation? Explain generation and demodulation of VSB signal.
10. Explain the generation of SSB-SC by Frequency discrimination method.
11. Describe the DSB-SC generation by Ring modulator.
12. A modulating signal $35\sin(2\pi \times 10^3 t)$ is used to modulate a carrier signal $75\sin(2\pi \times 10^4 t)$. Determine the modulation index, percentage of modulation, frequency of side bands and their amplitude. What is the bandwidth of the signal?
13. What is digital modulation? Explain its type.