List of practicals

1. Introduction to MATLAB and plot basic functions and signals like sine, cosine, tangent, unit impulse, unit step, unit ramp, and periodic signals like impulse train, square wave and triangular wave.
2. To perform Sampling and Reconstruction of signal (Hardware) and obtain its waveforms. Also Verify the Nyquist Criteria.
3. Write a program to compute exponential fourier series coefficients and plot the magnitude and phase spectrum. Also, plot the periodic signal using fourier series.
4. To perform Amplitude modulation and demodulation (Hardware) and obtain its waveforms. Also calculate the three different modulation indices.
5.
   a) To perform Pulse Amplitude Modulation: (Hardware)
      a. To modulate signal by Pulse Amplitude Modulation Scheme using Natural & Flat top sampling.
      b. To demodulate signal by Pulse Amplitude Modulation Scheme using Sample & Hold, Flat Top.
      c. Verify the sampling theorem by changing modulating & carrier frequency
   b) To perform Pulse Position Modulation and Demodulation and obtain its waveforms. (Hardware)
   c) To perform Pulse Width Modulation and Demodulation and obtain its waveforms(Hardware)

6. To study frequency modulation and demodulation and observe the waveforms.

a) Observe the spectra of FM signal in labAlive virtual communication lab and Calculate the modulation index for FM

b) To perform FM transmission via virtual lab labAlive for the audio signal

c) To perform FM reception via virtual lab labAlive for the obtained recorded signal

7.

a) To Generate and demodulate an amplitude shift keying(ASK) signal in MATLAB.

b) To study Frequency Shift Keying (FSK) Modulation in MATLAB Simulink.

c) To study Binary Phase Shift Keying (BPSK) Modulation in MATLAB Simulink.

8. Write a program for amplitude modulation and demodulation considering input as sinusoidal wave and plot the various signals in time domain and frequency domain (MATLAB)

9. Write a MATLAB code to modulate and demodulate the given signal by Delta Modulation Technique.

10. Write a program for frequency modulation and demodulation considering input as sinusoidal wave and plot the various signals in time domain and frequency domain in MATLAB

11. To find the Numerical Aperture of given optical fiber in Virtual LAB.