**EXPERIMENT LIST**

**Objective (Exp. No. 1)-** To study Spectrum Analyzer and observe the spectrum of sinusoidal signal and square wave. Draw the input waveforms in time domain and their output spectra for five different set of frequencies and amplitudes for each input.

**Objective (Exp. No. 2)-** To examine sampling and reconstruction of signal, verify the Nyquist criteria by varying sampling frequency. Draw the sampled version of waveform for the conditions:

(i) fs < 2fm, (ii) fs > 2fm and (iii) fs = 2fm; where fs - sampling frequency; fm - maximum baseband frequency and represent the output responses for different order low pass filter. Use virtual mode with appropriate software.

**Objective (Exp. No. 3)-** To study amplitude modulated (AM) technique, modulation-index (m), draw waveforms, spectra and trapezoidal display. Illustrate the observed AM signals for double sideband with and without carrier by changing m as: m>1, m<1 and m=1 and draw it. Use virtual mode with appropriate software.

**Objective (Exp. No. 4)-** To demonstrate frequency modulation (FM) and demodulation process by observing the waveforms in time domain and their spectra in frequency domain by varying the parameters of massage signal. Draw waveforms and spectra. Use virtual mode with appropriate software.

**Objective (Exp. No. 5)-** To examine of pulse amplitude modulation (PAM), pulse position modulation (PPM) and pulse width modulation (PWM) and verify and draw the resultant waveforms. Illustrate the circuit diagrams for PAM and PWM. Show & draw the output waveforms using the Matlab code/Simulink using virtual mode.

**Objective (Exp. No. 6)-** To study of amplitude shift keying (ASK), frequency shift keying (FSK) and phase shift keying (PSK) modulation technique and verify waveforms. Illustrate the schematic diagrams for ASK, FSK and PSK. Show & draw the input/output waveforms using Matlab code/Simulink using virtual mode.

**Objective (Exp. No. 7)-** To Study the transmission of amplitude modulated (AM) and frequency modulated (FM) signal under the Additive Gaussian noise channel (AWGN). Examine the effects of the AWGN on AM and/or FM signal using the Matlab/Simulink and draw the distorted waveforms for different signal to noise ratio (SNR) values. Show the input/output waveforms using Matlab code/Simulink in virtual mode.

**Objective (Exp. No. 8)-** Write and simulate a program for single side-band (SSB) modulation scheme. Draw the message/carrier waveforms and resultant modulated signal in time domain and frequency domain. Show the input/output waveforms using Matlab code/Simulink in virtual mode.

**Objective (Exp. No. 9)-** To demonstrate the pulse code modulation (PCM) and demodulation technique. Show the sampled, quantized/encoded and decoded time-domain signal for different bit-codes. Show the input/output waveforms using Matlab code/Simulink in virtual mode.

**Objective (Exp. No. 10)-** To demonstrate the delta modulation (DM) and demodulation technique. Show the sampled, quantized/encoded and decoded time-domain signal. Show the input/output waveforms using Matlab code/Simulink in virtual mode.

**Objective (Exp. No. 11)-** To examine the 16-Quadrature Amplitude Modulation (16-QAM) and demodulation scheme. Draw the 16-QAM m-ary mapped signal and modulated waveforms. Evaluate the BER values for it. Show the input/output waveforms using Matlab code/Simulink in virtual mode.