**Note:** Students are required to copy the program-files in this MS-Word document along with results in the same document.

**EXPERIMENT 4 WAVEFORM GENERATION**

**DATE:**

(i) Write a MATLAB/Scilab program to generate a discrete time sine wave with given amplitude, frequency, sampling frequency and phase. Plot the waveform of discrete time signal for two cycles starting with sample index zero. Calculate the energy of signal. Save the signal vector in data file and clear the workspace/variable browser before ending the program. Obtain the same signal vector again in workspace/variable browser by writing a proper function at command prompt/console.

(ii) Write a MATLAB/Scilab program to generate a discrete time unit impulse, unit step, unit ramp waveform. Take the range of sample index from -10 to 10. Calculate the energy of signal.

(ii) Write a MATLAB/Scilab program to generate a discrete time exponential waveform x(n)=c\*an. Take value of c, a and range of n as inputs. Calculate the energy of signal.