14/08/2019 IT204 Signals and Systems Lab 3

1. Consider an input x[n] and an impulse response h[n] given by

x[n] = [1, -1, -1, -1, 1, 0, 1, 2]; h[n] = [5, -4, 3, 2, -1, 1, 0, -1]

Determine circular convolution and plot the output y[n]

1. Write a MATLAB program to demonstrate Linear and Circular Convolution operation graphically for the input sequence and impulse sequence

(a) x = [2 1 2 1]; h = [1 2 3]

1. Write a MATLAB program to convolve input signal x(t) = u(t-1) with impulse signal h(t) = exp-t.u(t)
2. Consider an input x[n] and a unit impulse response h[n] given by

x[n] = (1/2)n-2 u[n-2]; h[n] = u[n+2]

Determine and plot the output y[n] = x[n] \* h[n]

1. Find the autocorrelation of x[n] = [1, -1, 1, -1, 1, -1]. Plot the output.
2. Find the cross correlation between two sequences x[n] and h[n]

x[n] = [1, 0, 2, 1]; h[n] = [1, 1, 2, 1]