# Lab Session No. 06

1. Write down the stepwise calculation of convolution of two signals given against task-1 in the lab demo and ensure the resulting vector matches with the result in MATLAB.

2. Write MATLAB code to perform convolution between a square pulse [0 0 0 0 4 4 4 4 0 0 0 0] and a triangular wave [0 0 0 1 2 3 4 3 2 1 0 0]. Using stem instruction, generate subplots for the two given vectors and the resultant vector. Hand-write your code and paste the subplots output.
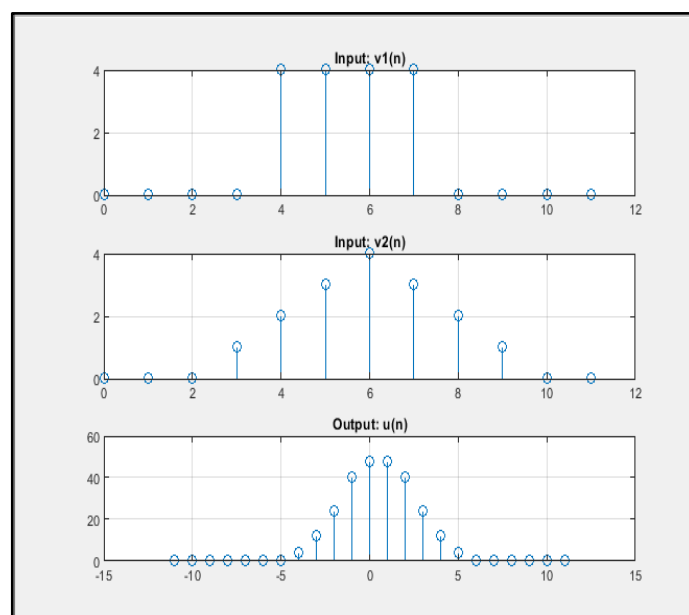
3. Write a sequence of MATLAB statements to compute convolution of signal x(t) and impulse response h(t) defined for times t = [-10: 10]. Using stem instruction, generate subplots for the two given vectors and the resultant vector. Hand-write your code and paste the subplots output.
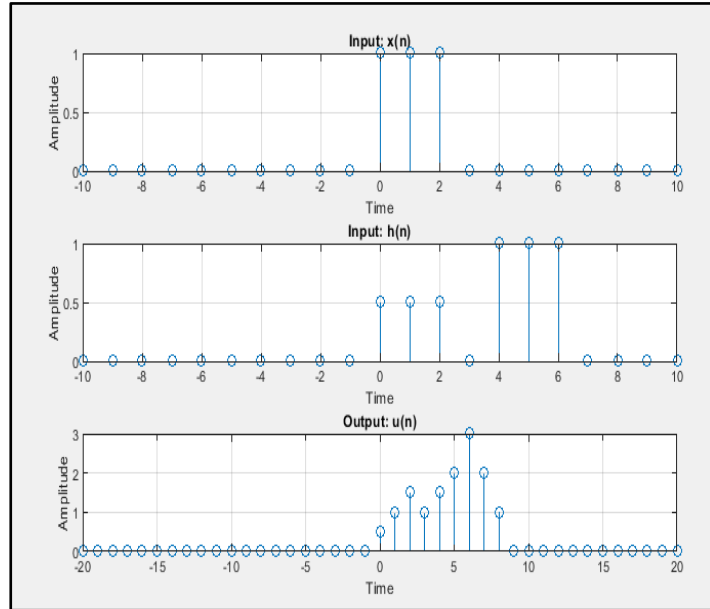
$x(t) = \{\ 1\ for\ 0 \leq t \leq 2\ ,\ 0\ otherwise$

$h(t) = \{\ 0.5\ for\ 0 \leq t \leq 2$

$\qquad 1\ for\ 4 \leq t \leq 6$

$\qquad 0\ elsewhere$

4. Write MATLAB commands to perform convolution between signal 'a' & 'b' for time interval [-20, +20]. Also do attach a printout of resultant signal. Using stem instruction, generate subplots for the two given vectors and the resultant vector. Hand-write your code and paste the subplots output. a) Gaussian curve b) Unit Ramp Signal