Signals & Systems Assignment 1 (Spring 2021) – 4Th Semester (CLO2)

Question 1. For input signal x[n] and system's impulse response h[n] given bellow, compute and plot the given convolutions.

$$x[n] = -1\delta[n+1] + 2\delta[n-3] + 3\,\delta[n-4]$$

$$h[n] = \delta[n+1] - 2\,\delta[n-2] + 4\delta[n-3]$$

a) $y_1[n] = x[n] * h[n]$
b) $y_2[n] = x[n+1] * h[n-2]$
c) $y_3[n] = x[n-2] * h[n]$

Question 2. Compute and plot output y[n] for h[n] and x[n] given bellow.

$$x[n] = (\frac{1}{3})^{n-1}u[n-1]$$

$$h[n] = u[n+1]$$

Question 3. Find the output y[n] for the pairs of x[n] and h[n] given in Figure 1, using convolution sum.

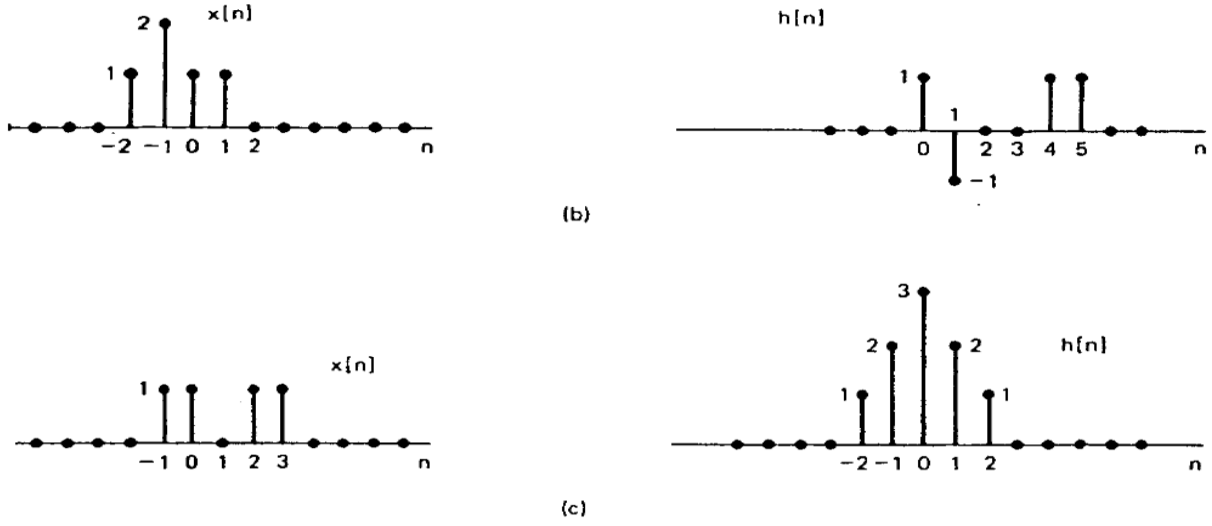

Figure 1

Question 3. Find the output y(t) for the pairs of x(t) and h(t) given bellow.

$$x(t) = u(t-2) - u(t-4)$$

$$h(t) = e^{-2t}(t-1)$$

Due date for this assignment 1 is Monday, 12th July 2021. Related quiz will be on Monday, 12th July 2021.