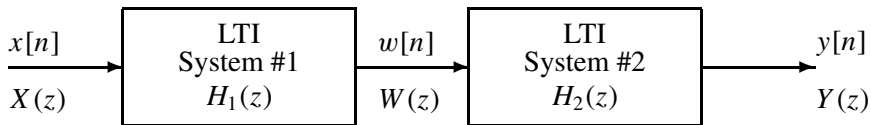## PROBLEM:

Consider the following cascade system:

Suppose that

$$H_1(z) = (1 - jz^{-1})(1 + jz^{-1})(1 + z^{-1}) \quad \text{and} \quad h_2[n] = \delta[n] + \delta[n-4]$$

(a) Determine the system function, $H(z)$, for the overall cascade system (i.e., from input $X(z)$ to output $Y(z)$.)

(b) Determine and plot the impulse response $h[n]$ of the overall cascade system.

(c) Write down the difference equation that relates $y[n]$ to $x[n]$.