ECE 310: Quiz #4 (3pm Section E) Fall 2018

UIN: _____

Name: _____ **Score:** _____

1. (6 pts) A causal linear time invariant system has transfer function $H(z) = \dfrac{1 - z^{-1}}{(1 + 3z^{-1})(1 - 2z^{-1})}$.

   (a) Determine a difference equation relating the input $x[n]$ to the output $y[n]$ for this system.

   (b) Find the impulse response of this system.

2. (4 pts) Determine in each case whether or not the system is BIBO stable. Justify your answer.

   (a) A causal system described by the difference equation $y[n] - 0.9y[n-2] = 90x[n] + x[n-1]$.

   (b) A system described by the equation $y[n] = h[n] * x[n]$, with $h[n] = (-1)^n u[n]$.