

ECE 310: Quiz #2 (10am Section G) Fall 2018

UIN: _____

Name: _____

1. (6 pts) Consider the system specified by the following input-output relation:

$$y[n] = e^{j\pi n^2} x[n]$$

Determine if it is: (i) linear or non-linear, (ii) time-invariant or time-varying. **Justify your answers with proofs or counter-examples.**

2. (4 pts) Compute the convolution $x[n]*h[n]$ for $x[n] = \left(\frac{1}{2}\right)^n u[n-2]$ and $h[n] = (n^2+1)(u[n] - u[n-2])$.