

DIGITAL SIGNAL PROCESSING

CHAPTER 3: z-Transform

QUIZ 4 (10 Marks)

Name: _____

Date: _____

Question 1

Perform the **z-transform** for the discrete-time signal below;

$$x(n) = (-3)^n \cos\left(\frac{\pi}{3}n\right) u(n)$$

Question 2

Determine **the poles** of the $X(z)$ below. Then, find the **impulse response**, $h(n)$ using **PFE method**.

$$X(z) = \frac{z^{-1} + \frac{1}{2}z^{-2}}{1 - \frac{3}{5}z^{-1} + \frac{2}{25}z^{-2}}$$

