

DIGITAL SIGNAL PROCESSING

CHAPTER 3: z-Transform

QUIZ 3 (10 Marks)

Name: \_\_\_\_\_

Date: \_\_\_\_\_

The LTI system is described by the following z-transform.

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

- (i) Explain why the analysis of LTI system need to be implemented in z-transform.
- (ii) Calculate  $x(n)$ .
- (ii) Sketch the pole-zero plot of the system.
- (iv) Determine the stability of the system.

