

Independent University Bangladesh (IUB) School of Engineering, Technology and Sciences (SETS) Department of Electrical and Electronic Engineering Autumn 2020 EEE 321LAB

Lab 6: Study on z-transform

Objectives:

- 1. To understand the frequency response.
- 2. To understand the poles and zeros of a system.
- 3. To understand the system stability.

MATLAB function for frequency response:

- \diamond MATLAB provides a function called *freqz* to compute the system function H(z).
 - \triangleright [H, ω] = freqz (b, a, N) \Diamond returns the N-points frequency vector ω and the N-pints complex frequency response vector H of the system, given its numerator and denominator coefficients in vector b and a.
 - \triangleright [H, ω] = freqz (b, a, N, 'whole') ◊ uses N points around the whole unit circle for computation.
 - \triangleright [H, ω] = freqz (b, a, N) \Diamond returns the frequency response at frequencies designated in vector ω, normally between 0 an π .

MATLAB function for frequency response:

> zplane (b,a) function is used for pole-zero plot.

Labwork:

1. Given that y(n) = 0.9y(n-1) + x(n). Determine the frequency response, H(z) and plot the magnitude and phase angle of H(z). Also sketch the pole-zero plot of H(z).

Lab Assignment-6

1. Develop a MATLAB function to perform the frequency response of a signal.

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