



ISRA UNIVERSITY

Islamabad Campus

Department of Electrical Engineering

Program: B.E. (Electrical)

Semester - Fall 2016

EL313- Signal & Systems

Quiz – 4

Marks: 15

Handout Date: 23/12/2016

Question # 1:

- a) Consider the linear constant coefficient difference equation:

$$y[n] - \frac{1}{2}y[n - 1] = x[n]$$

Which describes a linear, time-invariant system initially at rest. What is the system function $H(e^{j\omega})$ that describes $Y(e^{j\omega})$ in terms of $X(e^{j\omega})$?

- b) Using Fourier transform, evaluate $y[n]$ if $x[n]$ is:

$$\left(\frac{3}{4}\right)^n u[n]$$

Question # 2:

Find the Fourier transform using analysis equation:

$$x[n] = \begin{cases} -1, & n = -3, -1, 1, 3 \\ 1, & n = -2, 0, 2 \\ 0, & \text{otherwise} \end{cases}$$

Good Luck