Department of Electrical Engineering
Assignment
Date: 22/06/2020

Course Details

Course Title: Signals and Systems   **Module:**   6th

Instructor: **Total Marks:**   50

Student Details

Name: **Student ID:**

Q1.	Using the following Discrete Time Signal, Prove the two important properties in Discrete Fourier Series i.e.	Marks 10
		CLO 1

Using the following Discrete Time Signal, Prove the two important properties in Discrete Fourier Series i.e.

    a) $C_{K + N0} = C_K$

    b) $C_{-K} = C_{N0 - K} = C_K^{*}$

Find Fourier coefficient and DC component while the time period $N_0 = 4$ for the following Discrete Time Signal

$$X[n] = \{7, 8, 4, 3, 2, 6\}$$

Also plot

    a) Magnitude Spectrum

    b) Phase Spectrum

Q2.	Take your own ID # as a sequence X[n] and decompose this sequence into Impulses. Plot the decomposed sequence using their magnitudes and locations.	Marks 10
		CLO 1
Q3.	Flip and drag the following sequences by using graphical convolution method until unless their products become zero. Then plot the convoluted signal. H[n] = {2, 1, 2, -1} X[n] = {2, 4, 6, 2}	Marks 10
		CLO 1
Q4.	By using a method of your own choice, find the frequency domain representation of the following Discrete Time Signal	Marks 10
		CLO 2

Q4. By using a method of your own choice, find the frequency domain representation of the following Discrete Time Signal

    a) $X[n] = (1/2)^{n-1} U[n-1]$

    b) $X[n] = \delta[n] + \delta[n-1] + \delta[n-2]$

Q5.	By using zero padding find the multiplication of Discrete Fourier Transform of the following sequences;	Marks 10
		CLO 2

$X_1[n] = \{2, 4, 6\}$ $X_2[n] = \{8, 10, 12\}$	

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☺GOOD LUCK☺