**MATLAB ASSIGNMENT**

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**Code and Documentation:**

%%%%%%%% Exercise 1 %%%%%%%%

%% X[n]={1,-2, 4, 6, -5\*, 8, 10}, \* is zero’th index

%% Generate and Plot samples using stem function for sequences:

%% X1[n] = 3x[n+2]+x[n-4]+2x[n]

%% X2[n] = x[n+4]\*x[n-1]+x[2-n]-n\*x[n]

n=-4:2;

x=[1,-2,4,6,-5,8,10];

[x11,n11]=sigshift(3\*x,n,-2);

[x12,n12]=sigshift(x,n,4);

[x13,n13]=sigadd(x11,n11,x12,n12);

[x1,n1]=sigadd(x13,n13,2\*x,n);

[x21,n21]=sigshift(x,n,-4);

[x22,n22]=sigshift(x,n,1);

[x233,n233]=sigshift(x,n,-2);

[x23,n23]=sigfold(x233,n233);

[x211,n211]=sigmult(x21,n21,x22,n22);

[x221,n221]=sigmult(x23,n23,x,n);

[x2,n2]=sigadd(x211,n211,x221,n221);

hold on

subplot(2,1,1)

stem(n1,x1)

subplot(2,1,2)

stem(n2,x2)

hold off

%%%%%%%% Exercise 2 %%%%%%%%

%% Generate and plot samples of sequences: (0<n<25)

%% X[n] = n^2[u(n+5)-u(n-6)]+10DELTA(n)+20\*(0.5)^n[u(n-4)-u(n-10)]

n=0:25;

x1=(n.^2) .\*(stepseq(0,0,25)-stepseq(6,0,25))+(20\*(.5).^n).\*(stepseq(4,0,25)-stepseq(10,0,25));

stem(n,x1)

%%%%%%%% Exercise 3 %%%%%%%%

n=linspace(-2,3,5\*100);

y1=zeros(1,100);

n2=linspace(-1,0,100);

y2=1-cos(0.5\*pi\*n2);

n3=linspace(0,1,100);

y3=n3-1;

y=[y1 y2 y3 y1-1 y1];

stem(n,y);

**Plots and Figures:**

**Exercise One:**

**Exercise Two:**

**Exercise Three:**