Expt. No. : **2**

 Sampling 28-01-13

clc;

clear all;

close all;

%critical sampling

f1=1400;

t1=0:1/f1:13/f1;

x1=cos(2\*pi\*400\*t1)+cos(2\*pi\*700\*t1);

n1=0:length(x1)-1;

figure;

subplot(1,3,1);

stem(100\*n1,x1),grid,zoom;

xlabel('frequency'),ylabel('magnitude');

title('critical sampling');

%under sampling

f2=700;

t2=0:1/f2:6/f2;

x2=cos(2\*pi\*400\*t2)+cos(2\*pi\*700\*t2);

n2=0:length(x2)-1;

subplot(1,3,2);

stem(100\*n2,x2),grid,zoom;

xlabel('frequency');ylabel('magnitude');

title('under sampling');

%sampling

f3=1200;

t3=0:1/f3:21/f3;

x3=cos(2\*pi\*400\*t3)+cos(2\*pi\*700\*t3);

n3=0:length(x3)-1;

subplot(1,3,3);

stem(100\*n3,x3),grid,zoom;

xlabel('frequency');ylabel('magnitude');

title('over sampling');

Output:

