**Digital Signal Processing (DSP) Lab**

**Exp.3 Generating Unit impulse Sequence & Unit step sequence using ones & zeros functions**

1. **Generating Unit impulse Sequence's(n)=1 ; n=0**

**MATLAB code:**

n=-10:1:10

impulse=[zeros(1,10),ones(1,1),zeros(1,10)]

figure(1)

stem(n,impulse,'k','linewidth',2)

title('Generating Unit impulse Sequence')

xlabel('Amplitude')

ylabel('time')



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n=-5:1:20

impulse=[zeros(1,5),ones(1,1),zeros(1,20)]

figure(2)

stem(n,impulse,'b','linewidth',2)



1. **Generating Unit step Sequence**

**MATLAB code:**

n=-8:1:10

step=[zeros(1,8),ones(1,11)]

figure(3)

stem(n,step,'b','linewidth',2)

title('Generating Unit step Sequence')

xlabel('Amplitude')

ylabel('time')



%EX//Plot the following sequence using unit step sequence

x(n)={-2,0,3,0,0,5,1,1,-4}?

clear all

n=0:1:8

step=[-2\*ones(1,1),zeros(1,1),3\*ones(1,1),zeros(1,2),5\*ones(1,1), ones(1,2),-4\*ones(1,1)]

figure(4)

stem(n,step,'b','linewidth',3)

xlabel('Amplitude')

ylabel('time')



**Discussion:**

Plot the following sequence using the unit step sequence

x(n)={-3,-3,[3],2,2,5,1,1,-2}?

Find & plot the following sequence using ones & zeros functions

1. x(n)=2n[u(n)-u(n-3)] .
2. X(n)= S(n)+2S(n-1)+3S(n-2)+4S(n-3)