**Experiment-6**

**Aim:** Define (i)x=[1 1 2 3 4] and h=[1 1 1 2] and (ii) x(n) = cos(π n/8) [u(n) − u(n − 50)].

Use your function to find the output for this input signal.

**Code:**

1. **x=[1 1 2 3 4] and h=[1 1 1 2]**

clear all

clc

%convolution

x=[1 1 2 3 4];

h=[1 1 1 2];

lx=length(x);

lh=length(h);

for i=1:(lx+lh-1)

y(i)=0;

for j=1:lx

if (i+1-j)<=0

y(i)=y(i)+(x(j)\*0);

elseif (i+1-j)>lh

y(i)=y(i)+(x(j)\*0);

else

y(i)=y(i)+x(j)\*h(i+1-j);

end

end

end

X=[-1:1:length(y)-2];

stem(X,y);

%labeling

title('121285')

xlabel('x');

ylabel('y');

%axis([-5,5,-5,5]);

grid on

**(ii) x(n) = cos(π n/8) [u(n) − u(n − 50)].**

n= -100 : 100 ;  
u=zeros(1,length(n));  
x=zeros(1,length(n));  
h1=zeros(1,length(n));  
for i=1 : length(n);  
    if n(i)>=0  
        u(i)=1;  
    else  
        u(i)=0;  
    end  
end  
stem(n,u);  
axis([-100,100,-2,2]);  
for i=1 : length(n)  
    x=cos(n\*(pi/8));  
end  
figure,stem(n,x);  
for i=1 : length(n)  
    if i-50 >= 1  
        h1(i)=u(i-50);  
    elseif n(i) > 0  
        h1(i)=1;  
    else  
        h1(i)=0;        
    end      
  end  
figure,stem(n,h1);  
h=u+h1;  
figure,stem(n,h);  
axis([-100,100,-2,2]);  
title('h');  
y=x.\*h;  
figure,stem(n,y);  
title('2nd');  
c=conv2(y,u);  
figure,stem(c);  
title('conv');

