**2. b. Solving a Difference Equation (Natural Response of the System)**

**Y(n)- (9/16) y(n-2)=x(n-1) with y(-1) = 1 and y(-2) = -1**

clc;

clear all.

b=input(‘Enter numerator co-eff:’);

a=input(‘Enter denominator co-eff:’);

z=input(‘Enter intial condition:’);

n=input(‘Enter number of samples:’);

p=filtic(b,a,z);

o=filter(b,a,zeros(1,n),p);

disp(&#39;natural respone :&#39;)

disp(o);

a=o:n-1;

stem(a,o);

xlabel(‘n’);

ylabel(‘y[n]’);

title(‘Natural response’);

**OUTPUT:**

