// Caption : Program to find the Circular Convolution of giv n

// discrete sequences using Matrix method

clear ;

clc ;

x1 = [2 ,1 ,2 ,1]; // First sequence

x2 = [1 ,2 ,3 ,4]; // Second sequence

m = length (x1); // length of first sequence

n = length (x2); // length of second sequence

//To make length of x1 and x2 are Equal

if (m >n)

for i = n +1: m

x2(i) = 0;

end

elseif (n>m)

for i = m +1: n

x1(i) = 0;

end

end

N = length (x1);

x3 = zeros (1,N); // x3 = Circular convolution result

a (1) = x2 (1) ;

for j = 2:N

a(j) = x2(N-j +2) ;

end

for i =1: N

x3 (1) = x3 (1) +x1(i)\*a(i);

end

X(1 ,:)=a;

// Calculation of circular convolution

for k = 2:N

for j =2: N

x2(j) = a(j -1) ;

end

x2 (1) = a(N);

X(k ,:)= x2;

for i = 1:N

a(i) = x2(i);

x3(k) = x3(k)+x1(i)\*a(i);

end

end

disp (X, ' Circular Convolution Matrix x2 [n]= ' )

disp (x3 , ' Circular Convolution Result x3 [n] = ' )

Circular Convolution Matrix x2 [n]=

1. 4. 3. 2.

2. 1. 4. 3.

3. 2. 1. 4.

4. 3. 2. 1.

Circular Convolution Result x3 [n] =

14. 16. 14. 16.