RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

CSE 4104

LAB REPORT-01

UTSHAB KUMAR GHOSH

DEPT.: CSE , SECTION: A

ROLL: 1603022

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SUBMITTED TO-

***MD. ASIFUR RAHMAN* SIR**

LECTURER

B.Sc.Engg.,RUET

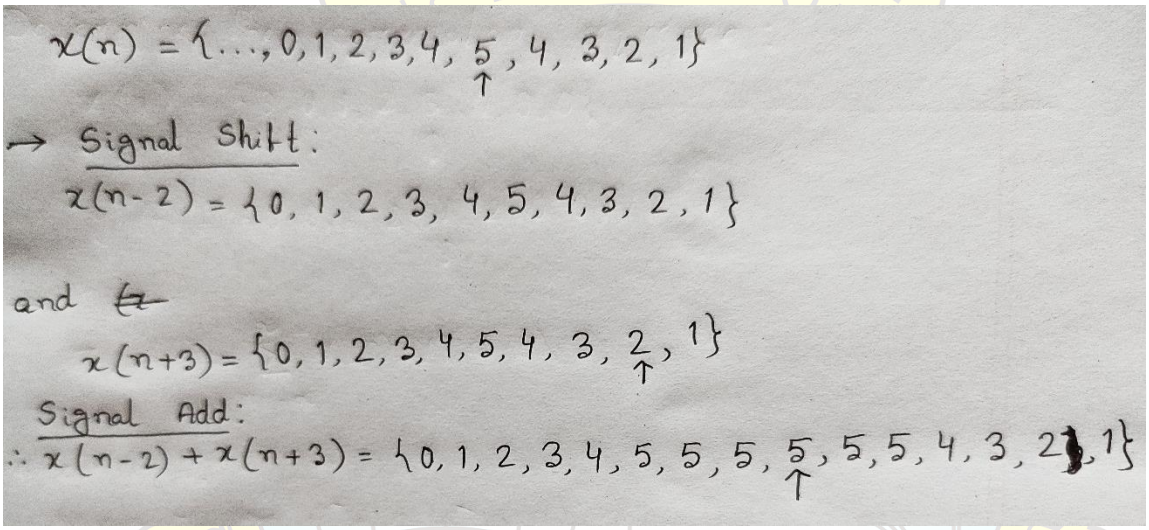
Problem: Basic Signal Operations.

x(n) = {…, 0, 1, 2, 3, 4, 5, 4, 3, 2, 1}. Find out:

i. **y(n) = x(n – 2) + x(n + 3)**

ii. **y(n) = x(2n – 2) + x(n + 3)**

Hand written Work:



Code Snippets:

main.m:

```
% y(n) = x(n-2) + x(n+3)
n =[-5:4];
x = [0:5,4:-1:1];
[x11, n11] = sigshift(x,n,2);
[x12, n12] = sigshift(x,n,-3);
[x1,n1] = sigadd(x11,n11, x12,n12);
subplot(2,1,1);
stem(n1,x1);
xlabel('n');
ylabel('y(n)');
```

sigshift.m:

```
function [y,n] = sigshift(x,m,k)
% implements y(n) = x(n-k)
% ------------------------
% [y,n] = sigshift(x,m,k)
%
n = m+k; y = x;
```

sigadd.m:

```
function [y,n] = sigadd(x1,n1,x2,n2)
% implements y(n) = x1(n)+x2(n)
% ------------------------------
% [y,n] = sigadd(x1,n1,x2,n2)
%   y = sum sequence over n, which includes n1 and n2
%  x1 = first sequence over n1
%  x2 = second sequence over n2 (n2 can be different from n1)
%
n = min(min(n1),min(n2)):max(max(n1),max(n2));  % duration of
y(n)
y1 = zeros(1,length(n)); y2 = y1;
y1(find((n>=min(n1))&(n<=max(n1))==1))=x1;
y2(find((n>=min(n2))&(n<=max(n2))==1))=x2;
y = y1+y2;
```

Output: