American International University, Bangladesh

Data Communication

Section: E

Semester: Summer 2021-22

Course Instructor: Tanjil Amin

Experiment no: 01

Experiment Name: Introduction to MATLAB

Submitted by:

Name	ID
Sheikh Muhtasim Nasif	20-42119-1
Mysara Nur Tanha	20-42261-1
Anonnya Sarkar	20-42600-1
Md Al- Amin	20-42481-1
Md Abdul Mukit	19-40921-1

Here used ID

20-42600-1

So,

A=2

B=0

C=4

D=2

E=6

F=0

G=0

H=1

Answer to the question no a:

MATLAB code:

```
k1=2;
k2=3;
j1=(11*pi)/90;
j2=pi/6;
t=0:0.1001:4;
x1=k1*cos(2*pi*(11*t)+j1);
x2=k2*cos(2*pi*(11*t)+j2);
plot(t,x1)
xlabel2('Time');
ylabel('Amplitute');
title('x1=k1*cos(2*pi*(11*t)+j1);')
plot(t,x2)
title('x2=k2*cos(2*pi*(11*t)+j2);')
```
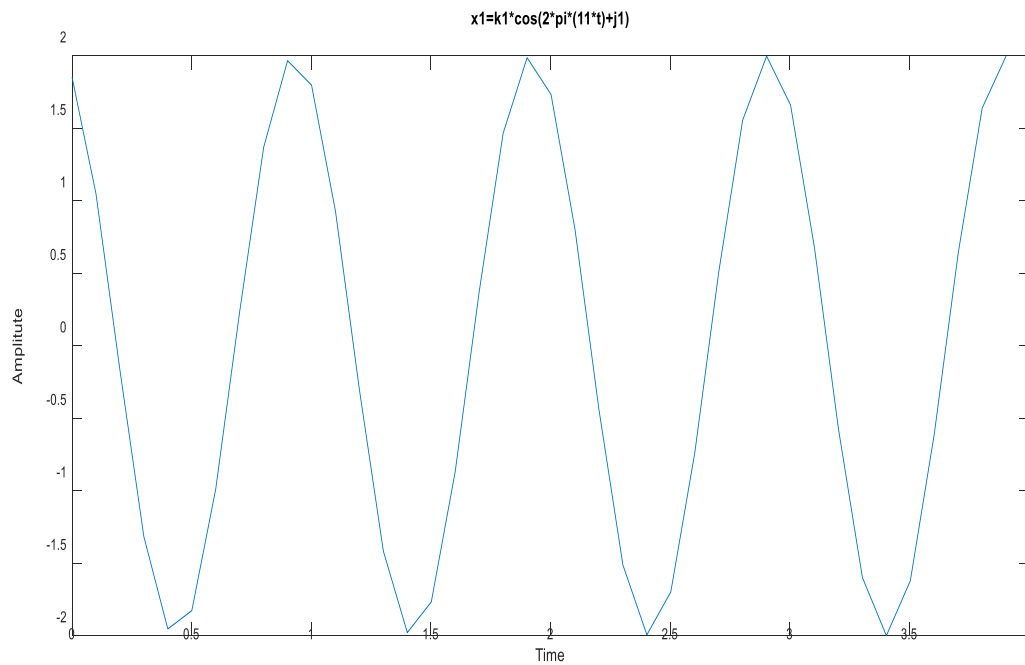
x1=k1*cos(2*pi*(11*t)+j1)

Fig 01: Signal of x1(t)

x2=k2*cos(2*pi*(11*t)+j2);
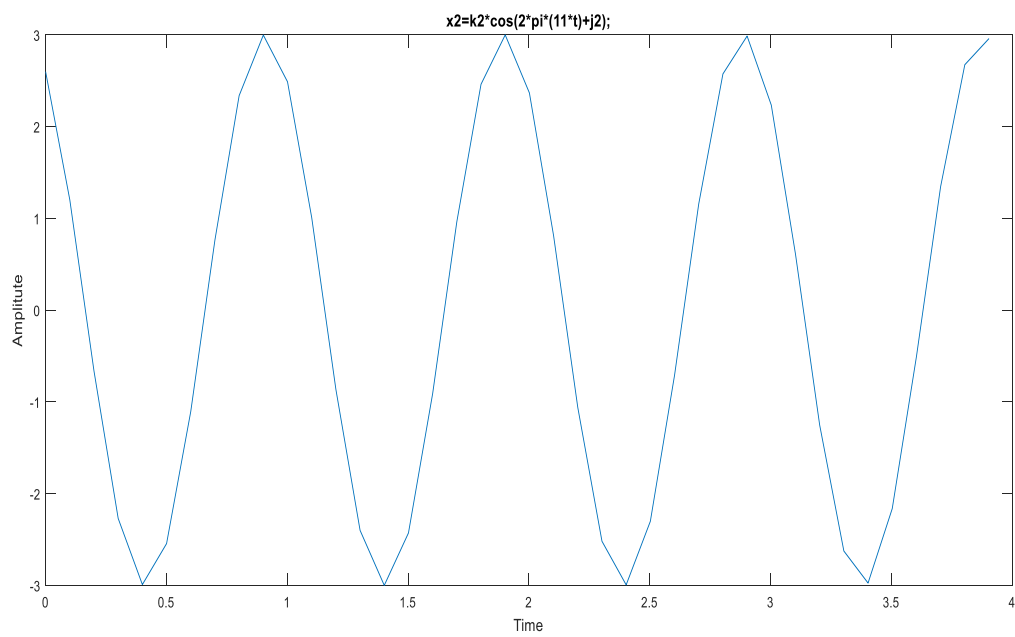
Fig 02: Signal of x2(t)

<h1 style="text-align: center;"><u>Answer to the question no b:</u></h1>

<u>MATLAB Code:</u>

```
k1=2;
k2=3;
j1=(11*pi)/90;
j2=pi/6;
t=0:0.1001:4;
x1=k1*cos(2*pi*(11*t)+j1);
x2=k2*cos(2*pi*(11*t)+j2);
%plot(t,x1)
%xlabel2('Time');
%ylabel('Amplitute');
title('x1=k1*cos(2*pi*(11*t)+j1);')
plot(t,x2)
title('x2=k2*cos(2*pi*(11*t)+j2);')
x3=x1+x2;
plot(t,x3)
title('x3=x1+x2')
```
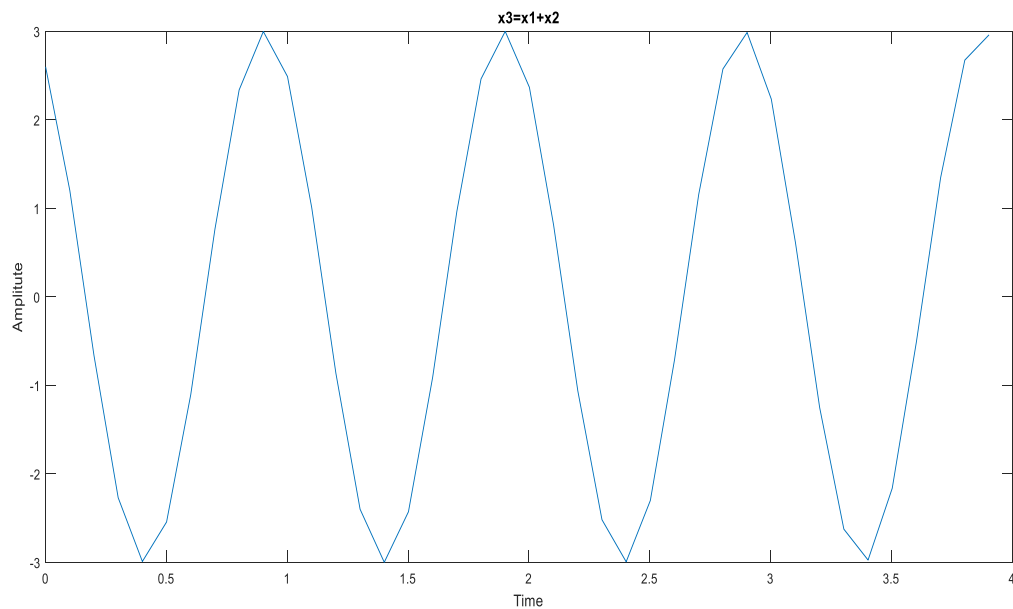

<p style="text-align: center;">Fig 03: Signal of x3(t)</p>

Answer to the question no c:

MATLAB Code:

```matlab
k1=2;
k2=3;
j1=(11*pi)/90;
j2=pi/6;
t=0:0.1001:4;
x1=k1*cos(2*pi*(11*t)+j1);
x2=k2*cos(2*pi*(11*t)+j2);
%plot(t,x1)
%xlabel2('Time');
%ylabel('Amplitute');
title('x1=k1*cos(2*pi*(11*t)+j1);')
plot(t,x2)
title('x2=k2*cos(2*pi*(11*t)+j2);')
x3=x1+x2;
%plot(t,x3)
%title('x3=x1+x2')
subplot(3,1,1)
plot(t,x1)
title('x1=k1*cos(2*pi*(11*t)+j1);')
%xlabel1=('Time');
%ylabel1=('Amplitute');

subplot(3,1,2)
plot(t,x2)
xlabel2=('Time');
ylabel2=('Amplitute');
title('x2=k2*cos(2*pi*(11*t)+j2);')
subplot(3,1,3)
plot(t,x3)
xlabel3=('Time');
ylabel3=('Amplitute');
title('x3=x1+x2')
```
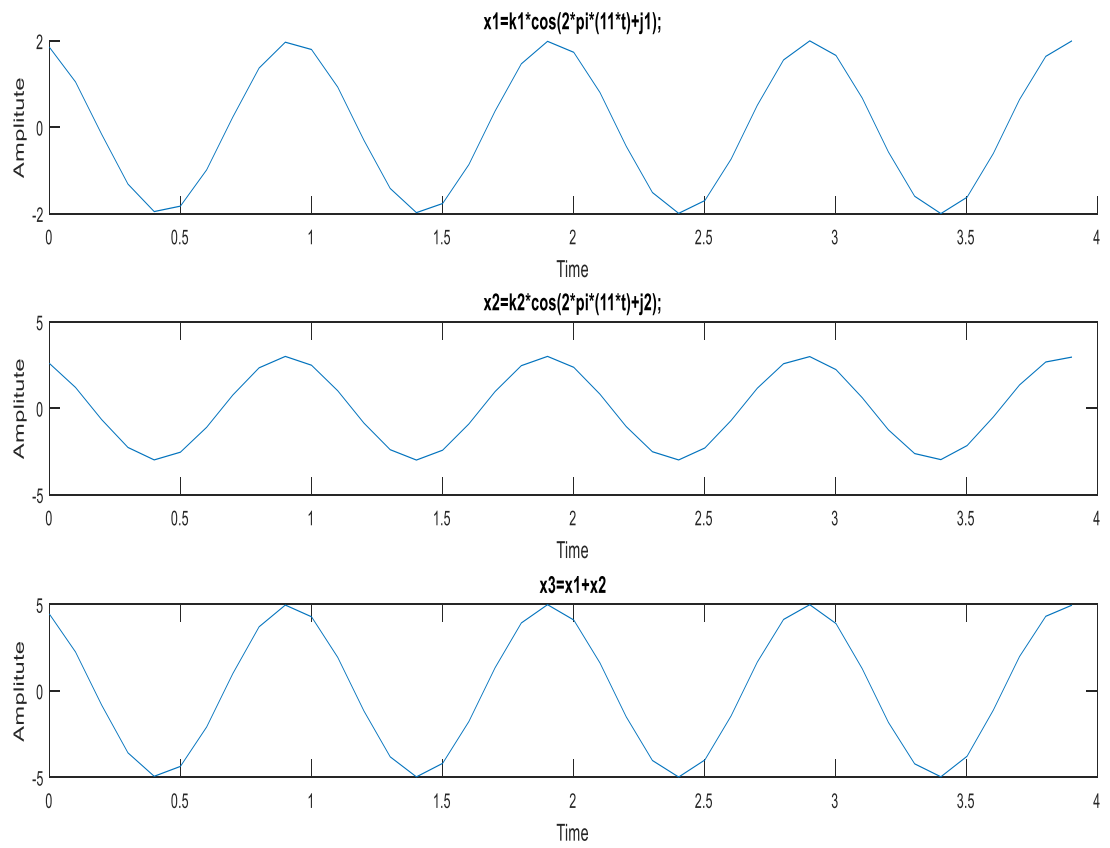
Fig 04: Signal using subplot