**AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH**

**Faculty of Engineering**

**Laboratory Report Cover Sheet**

**Degree Program: \_BSc. CSE**

**Course Instructor: ABIR AHMED**

Laboratory Title: **Introduction to MATLAB** Experiment Number: **01**

Due Date: 06-02-2021 Semester: 07 Subject Code: **COE3201**

Subject Name: **DATA COMMUNICATION** Section: C

***Submitted by:***

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| **No.** | **Student Name** |  | **Student Number** | **Date** |
| **1** | **Alamin Sheikh** | **18-39230-3** | | 6/2/2021 |

**MathLab Code:-**

%let, a1 = AB, a2 = GH, j1 = DG, j2 =30

%A.AB-CDEFG-H = 18-39230-3

% so, a1=18, a2=03, j1=90, CDEF = 3923

lc;

close all;

clear all;

CDEF = 3923;

a1 = 18;

a2 = 03;

J1 = 90;

J2 = 30;

Fs = 20;

dt = 1/Fs;

StopTime = 3;

t = (-3:dt:StopTime-dt);

j1 = deg2rad(J1);

j2 = deg2rad(J2);

x1 = a1 \* cos(2\*pi\*CDEF\*t + j1);

x2 = a2 \* cos(2\*pi\*CDEF\*t + j2);

x3 = x1+x2;

%B.Plot between two signals

plot(t,x1,'-b');

hold on

plot(t,x2,'-r');

grid on

title('V vs s')

xlabel('time(s)')

ylabel('amplitude(V)')

hold off

%C.Verify the plot of two signals

maxF1 = max(x1);

indexOfFirstMax1 = find(x1 == maxF1, 1, 'first');

maxY1 = x1(indexOfFirstMax1);

maxX1 = t(indexOfFirstMax1);

maxF2 = max(x2);

indexOfFirstMax2 = find(x2 == maxF2, 1, 'last');

maxY2 = x2(indexOfFirstMax2);

maxX2 = t(indexOfFirstMax2);

hold on

%D.Subplots

grid on

subplot(3,1,1)

plot(t,x1,'-r')

title('V vs s')

xlabel('time(s)')

ylabel('amplitude(V)')

grid on

subplot(3,1,2)

plot(t,x2,'-b')

title('V vs s')

xlabel('time(s)')

ylabel('amplitude(V)')

%E.Third sinusoid

grid on

subplot(3,1,3)

plot(t,x3,'-k')

title('V vs s')

xlabel('time(s)')

ylabel('amplitude(V)')

maxF3 = max(x3);

indexOfFirstMax3 = find(x3 == maxF3, 1, 'last');

maxY3 = x3(indexOfFirstMax3);

maxX3 = t(indexOfFirstMax3);

hold off

**Result**

