NAME: AGWANIRU RPSEMARY ONYINYECHI

MATRIC NO: 17/ENG01/003

COURDE CODE: ENG 382

COURSE TITLE: ENGINEERING MATHEMATICS IV

SOLUTION TO ASSIGNMENT IV

Using MatLAB

**Function File**

* function dydt = mathsassignfour(t,y)

 dydt(1) = -0.03\*y(1)+0.005\*y(2)+1;

 dydt(2) = 0.03\*y(1)-0.018\*y(2)+0.0075\*y(3);

 dydt(3) = 0.013\*y(2)-0.0325\*y(3);

 dydt=dydt';

* end

**SIMULATION FILE**

commandwindow

clearvars

clc

close all

[t,Q] = ode45('mathsassignfour', [0:40:1200], [0 0 0]);

figure(1)

subplot(3,1,1)

plot(t,Q(:,1),'o-green')

xlabel('Time (min)')

ylabel('Volume (Litre)')

grid on

grid minor

axis tight

subplot(3,1,2)

plot(t,Q(:,2),'\*-blue')

xlabel('Time (min)')

ylabel('Volume (Litre)')

grid on

grid minor

axis tight

subplot(3,1,3)

plot(t,Q(:,3),'+-red')

xlabel('Time (min)')

ylabel('Volume (Litre)')

grid on

grid minor

axis tight

figure(2)

plot(t,Q)

xlabel('Time (min)')

ylabel('Volume (Litres)')

legend('Tank 1', 'Tank 2', 'Tank 3')

grid on

grid minor

axis tight

GRAPH (FIGURE 1)



DYNAMIC RESPONSES OF TANK

