**FOR THE FUNCTION FILE**

function dQdt = fourthclass(t,Q)

dQdt(1)=-((15/500)\*Q(1))+((5/1000)\*Q(2))+1;

dQdt(2)=((15/500)\*Q(1))-((18/1000)\*Q(2))+((3/400)\*Q(3));

dQdt(3)= (13/1000)\*Q(2)-((13/400)\*Q(3));

dQdt=dQdt';

**FOR THE SIMULATION FILE**

commandwindow

clearvars

clc

close all

syms t

t=0:1:1200

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

figure(1)

subplot(3,1,1)

plot(t,Q(:,1),'go-')

xlabel('Time(min)')

ylabel('Volume(litre)')

legend('Tank1')

grid on

axis tight

subplot(3,1,2)

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

xlabel('Time(min)')

ylabel('Volume(litre)')

legend('Tank2')

grid on

axis tight

subplot(3,1,3)

plot(t,Q(:,3),'r-.+')

xlabel('Time(min)')

ylabel('Volume(litre)')

grid on

legend('Tank3')

axis tight