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17/ENG04/057

ELECTRICAL ELECTRONICS ENGINEERING

ENGINEERING MATHEMATICS ASSIGNMENT IV

SOLUTION:

**FUNCTION FILE**

function dQdt = rashidat(t,Q);

dQdt(1,1)=-0.03\*Q(1)+0.005\*Q(2)+1;

dQdt(2,1)=0.03\*Q(1)-0.018\*Q(2)+0.0075\*Q(3);

dQdt(3,1)=0.013\*Q(2)-0.0325\*Q(3);

dyQdt=dQdt';

**SIMULATION FILE**

commandwindow

clearvars

clc

close all

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

figure(1)

subplot(3,1,1)

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

xlabel('Time(min)')

ylabel('volume(Litre)')

legend('Tank 1')

grid on

grid minor

axis ([0 1200 0 50])

subplot(3,1,2)

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

ylabel('volume(Litre)')

legend('Tank 2')

grid on

grid minor

axis ([0 1200 0 100])

subplot(3,1,3)

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

xlabel('Time(min)')

ylabel('volume(Litre)')

legend('Tank 3')

grid on

grid minor

axis ([0 1200 0 40])

title('Figure 1: Dynamic response of tanks')

**PLOTTED GRAPH**

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