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MATRICNUMBER:17/ENG05/022

DEPARTMENT:Mechatronics Engineering

1function[dmdt]=EBUBE(t,m)

2

3dmdt(1)=-((15/500)\*m(1))+((5/1000)\*m(2))+1;

4dmdt(2)=((15/500)\*m(1))-((18/1000)\*m(2))+((3/400)\*m(3));

5dmdt(3)=((13/1000)\*m(2))-((13/400)\*m(3));

6

7dmdt=dmdt';

8end

1commandwindow

2clear

3clc

4closeall

5width=[0:1:1200];

6initial=[000];

7[t,Q]=ode45(@EBUBE,width,initial);

8figure(1)

9subplot(3,1,1)

10plot(t,Q(:,1),'go-')

11xlabel('Time(min)')

12ylabel('Volume(litres)')

13legend('Tank1','Location','South')

14gridon

15axistight

16title('Figure1:DynamicResponsesoftheTanks')

17subplot(3,1,2)

18plot(t,Q(:,2),'b\*--')

19xlabel('Time(min)')

20ylabel('Volume(litres)')

21legend('Tank2', 'Location','South')

22gridon

23axistight

24subplot(3,1,3)

25plot(t,Q(:,3),'r+--')

26xlabel('Time(min)')

27ylabel('Volume(litres)')

28legend('Tank3','Location','South')

29gridon

30axistight

