

```

1 function [dmdt] =
Joshua(t,m) 2
3 dmdt(1)= -((15/500)*m(1))+ ((5/1000)*m(2))+1;
4 dmdt(2)= ((15/500)*m(1))-((18/1000)*m(2))+ ((3/400)*m(3));
5 dmdt(3)= ((13/1000)*m(2))-((13/400)*m(3));
6
7 dmdt=dmdt';
8 end

1 commandwindow
2 clear
3 clc
4 close all
5 width= [0:1:1200];
6 initial=[0 0 0];
7 [t,Q]= ode45(@joshua,width,initial);
8 figure(1)
9 subplot(3,1,1)
10 plot(t,Q(:,1),'go-')
11 xlabel('Time (min)')
12 ylabel('Volume(litres)')
13 legend('Tank 1', 'Location', 'South')
14 grid on
15 axis tight
16 title('Figure 1:Dynamic Responses of the Tanks')
17 subplot(3,1,2)
18 plot(t,Q(:,2),'b*--')
19 xlabel('Time (min)')
20 ylabel('Volume(litres)')
21 legend('Tank 2', 'Location', 'South')
22 grid on
23 axis tight
24 subplot(3,1,3)
25 plot(t,Q(:,3),'r+--')
26 xlabel('Time(min)')
27 ylabel('Volume (litres)')
28 legend('Tank 3', 'Location', 'South' )
29 grid on
30 axis tight

```

