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**Matric. Number: 17/ENG03/024**

**ENG 382 Assignment**

**1 function [dmdt] = chokes(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));**

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

**6 dmdt=dmdt';**

1. **end**
   1. **commandwindow**
   2. **clear**
   3. **clc**
   4. **close all**

**5 width= [0:1:1200];**

1. **initial=[0 0 0];**
2. **[t,Q]= ode45(@chokes,width,initial);**
3. **figure(1)**
4. **subplot(3,1,1)**

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

1. **xlabel('Time (min)')**
2. **ylabel('Volume(litres)')**
3. **legend('Tank 1', 'Location', 'South')**
4. **grid on**
5. **axis tight**
6. **title('Figure 1:Dynamic Responses of the Tanks')**
7. **subplot(3,1,2)**

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

1. **xlabel('Time (min)')**
2. **ylabel('Volume(litres)')**
3. **legend('Tank 2', 'Location', 'South')**
4. **grid on**
5. **axis tight**
6. **subplot(3,1,3)**

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

1. **xlabel('Time(min)')**
2. **ylabel('Volume (litres)')**
3. **legend('Tank 3', 'Location', 'South' )**
4. **grid on**
5. **axis tight**

