

NAME: MAJJIGA JASWANTH

REGNO: 20BCD7171

Lab 6

Code 1

```
clc
clear all
syms Q(t)
ode=diff(Q,t,1)+100*Q==10;
cond1 = Q(0) == 0;
fprintf('MAJJIGA JASWANTH 20BCD7171')
QSol(t)=dsolve (ode,cond1)
current=diff(QSol(t))|
```

Command window

```
MAJJIGA JASWANTH 20BCD7171
QSol(t) =

1/10 - exp(-100*t)/10

current =

10*exp(-100*t)
```

Code 2

```
clc
clear all
syms F(t)
ode = diff(F,t,2) + 8*diff(F,t,1) + 10*F == 48*sin(10*t);
cond1 = F(0) ==0;
y(t) = diff(F,t);
cond2 = y(0) ==0;
A = [cond1 , cond2];
fprintf('MAJJIGA JASWANTH 20BCD7171')
Fsol(t) = dsolve(ode, A)
```

COMMAND WINDOW

```
(4*6^(1/2)*exp(4*t+6^(1/2)*t)*exp(-t*(6^(1/2)+4))*(10*cos(10*t)-sin(10*t)*(6^(1/2)+4)))/((6^(1/2)+4)^2+100)-(4*6^(1/2)*exp(4*t-6^(1/2)*t)*exp(t*(6^(1/2)-4))*(10*cos(10*t)+sin(10*t)*(6^(1/2)-4)))/((6^(1/2)-4)^2+100)-(20*6^(1/2)*exp(t*(6^(1/2)-4)))/(4*6^(1/2)-61)+(20*6^(1/2)*exp(-t*(6^(1/2)+4))*(488*6^(1/2)-3817))/((4*6^(1/2)-61)^2*(4*6^(1/2)+61))
```