EXPERIMENT NUMBER-01(b)

AIM:-

Solution of First Order Differential Equations(R-C Circuit).

APPARATUS REQUIRED:-

- Scilab

PROGRAMMING CODE:-

```
clc;
clear;
disp("Prattayaya amrit")
disp("13601")
disp("B.Sc(Hons) Electronics")
disp("AIM :- Solution of First Order Differential Equation of RC
circuit ")
//taking input from the user
C = input("Enter the value of Capacitor (in Farad) : ")
R = input("Enter the value of Resistor (in Ohm) : ")
V = input("Enter the value of Peak Value (in Volt) : ")
//defining f
f = (R*C)^-1
// defining function
function idot=myode(t, i, dv)
    //i1dot = (V*2*%pi*f*cos(2*%pi*f*t1) - i1/C)/R
    idot = (dv - i/C)/R
endfunction
i0 = 0;
t0 = 0;
t = 0 : 0.001/f : 10/f
dv = V*diff(sin(2*%pi*f)*t)/(0.0001/f);
i = ode(i0, t0, t, myode);
clf;
plot(t,i,"color","orange")
// to add legend, title and axis labels
xlabel("Time (in sec)")
ylabel("First Order Differential Equation")
title("AIM :- Solution of First Order Differential Equation")
legend("Capacitor")
```

OUTPUT:-

```
  "Prattayaya amrit"
  "13601"
  "B.Sc(Hons) Electronics"
  "AIM :- Solution of First Order Differential Equation of RC circuit "
Enter the value of Capacitor (in Farad) : 10

Enter the value of Resistor (in Ohm) : 100

Enter the value of Peak Value (in Volt) : 12


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```