EXPERIMENT NUMBER-01(a)

AIM:-

Solution of First Order Differential Equations(L-R 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 LR
circuit ")
//taking input from the user
L = input("Enter the value of Inductor (in Henry) : ")
R = input("Enter the value of Resistor (in Ohm) : ")
V = input("Enter the value of Peak Value (in Volt) : ")
f = input("Enter the value of Frequency (in Hertz) : ")
//defining a function to solve ordinary differential equation
function idot=F(t, i, Vin, R, L)
    idot =  (V*sin(2*%pi*f*t) - i*R)/L
endfunction
i0 = 0;
t0 = 0;
t = 0 : 0.01/f : 10/f;
i = ode(i0, t0, t, F);
clf;
plot(t, i,"color","black")
// 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("Inductor")
```

OUTPUT:-

```
  "Prattayaya amrit"
  "13601"
  "B.Sc(Hons) Electronics"
  "AIM :- Solution of First Order Differential Equation of LR circuit "
Enter the value of Inductor (in Henry) : 12

Enter the value of Resistor (in Ohm) : 23

Enter the value of Peak Value (in Volt) : 15

Enter the value of Frequency (in Hertz) : 100


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```