**EXPERIMENT – 6**

**Aim:** Exercises to plot the functions and solve first order and second order differential equation in Scilab

**Program:**

function[y]= f(x,\_);

y=x.\*x+1

endfunction

x1=-10:1:10;

y1=f(x1);

subplot(3,1,1);

plot(x1,y1);

xlabel('x-axis');

ylabel('y-axis');

title('2-D plot');

y0=1;

t0=0;

x2=0:0.1:5;

y2=ode(y0,t0,x2,f);

subplot(3,1,2)

plot(x2,y2,'Linewidth',2);

xlabel('x-axis');

ylabel('y-axis');

title('First Order Differential Equation');

function[xp]=f2(t,x)

xp(1)=x(2);

xp(2)=-3\*x(2)+10\*x(1);

endfunction

y0=[1;3];

t0=1;

x3=3:0.5:5;

y3=ode(y0,t0,x3,f2);

subplot(3,1,3)

plot(x3,y3(1,:),'Linewidth',2);

xlabel('x-axis');

ylabel('y-axis');

title('Second Order Differential Equation');

**Output:**





