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ROLL NO:- 21/610

SUBJECT :- MATHEMATICS

COURSE:-B.SC(HONS)

ELECTRONICS

PRACTICAL :- 2

AIM:- To solve second order homogenous differential equation and verify it with scilab software

APPARATUS:- Scilab software 6.1.1

THEORY:- Second order differential equations with constant coefficients written in form of $x''(t) + ax'(t) + bx(t) = 0$

EQUATIONS TO BE SOLVED:-

- $Y'' + 2y' + 2y = 0$
- $2y'' + 20y = 0$
- $Y'' + 2y' - 15y = 0$

ALGORITHM

Step 1: converting the second order equation into first order differential equation

STEP 2: Giving the function

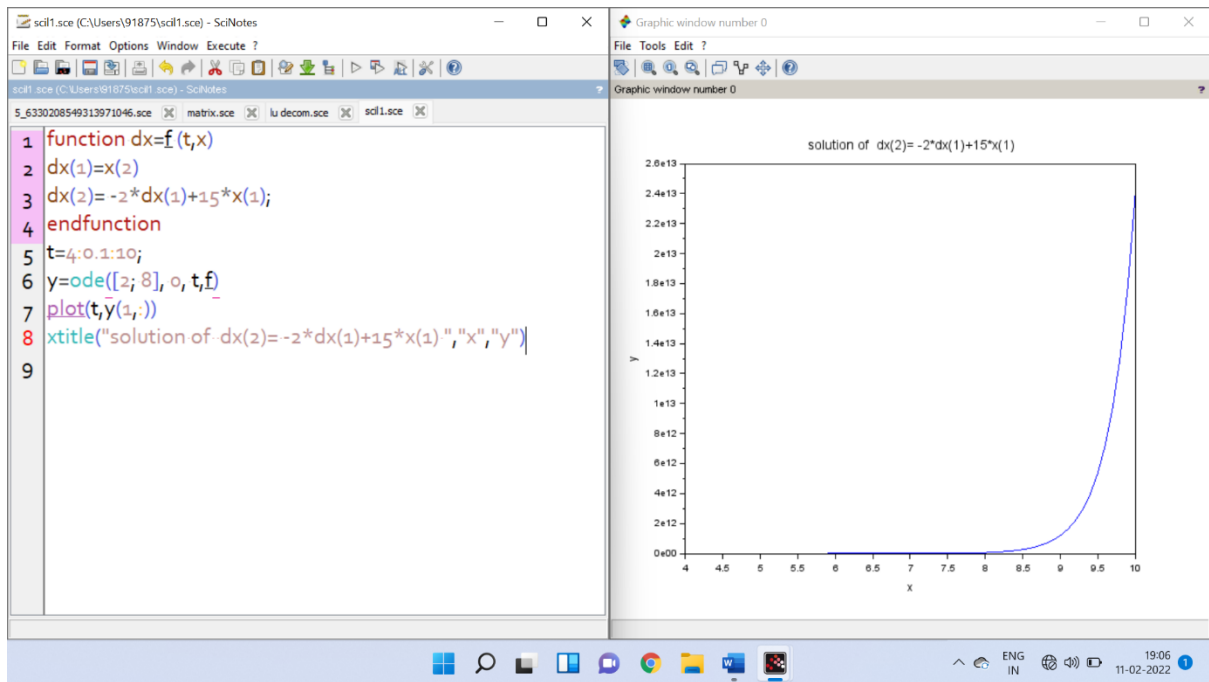
STEP 3: Define the variables

STEP 4: solving through ODE command

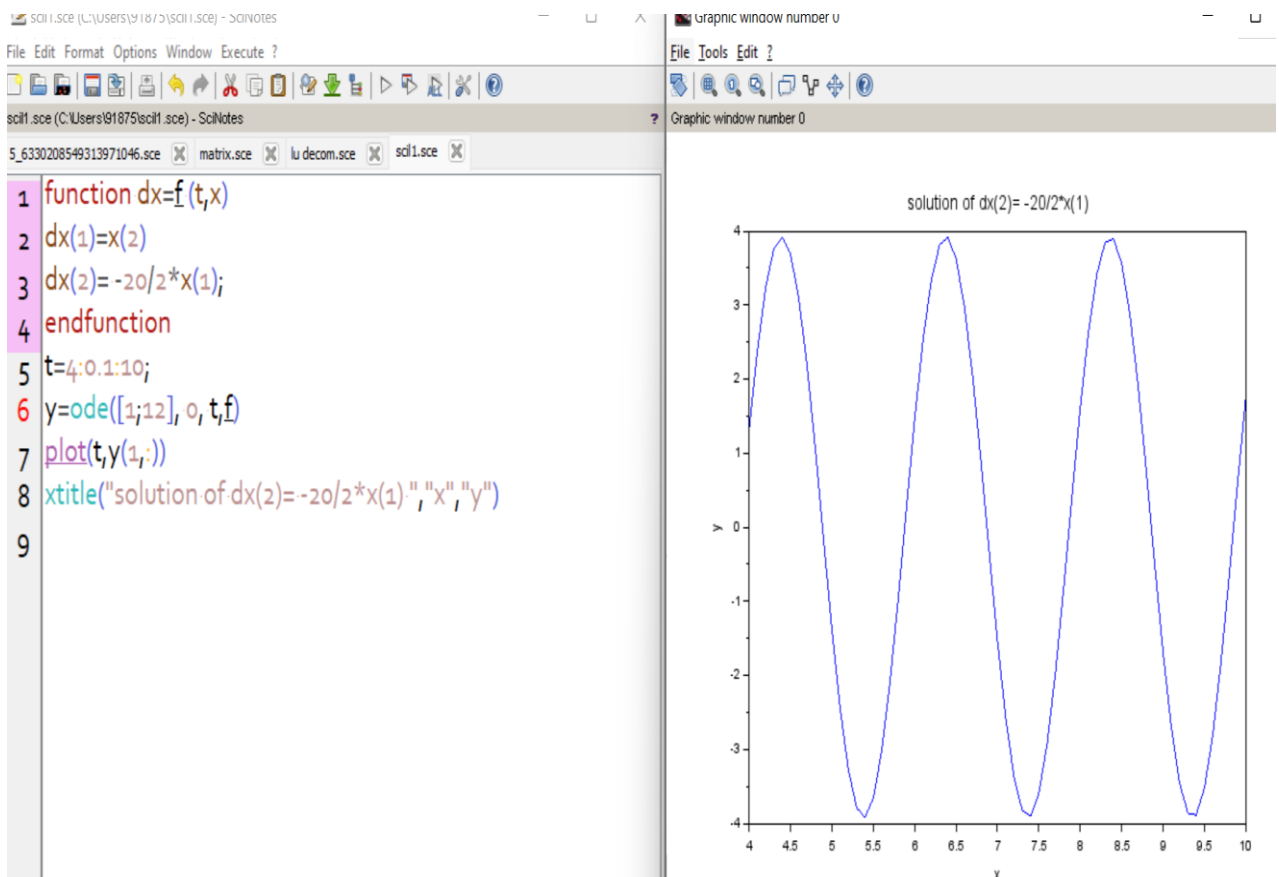
STEP 5: plot the graph and give the title

PROGRAMMING AND

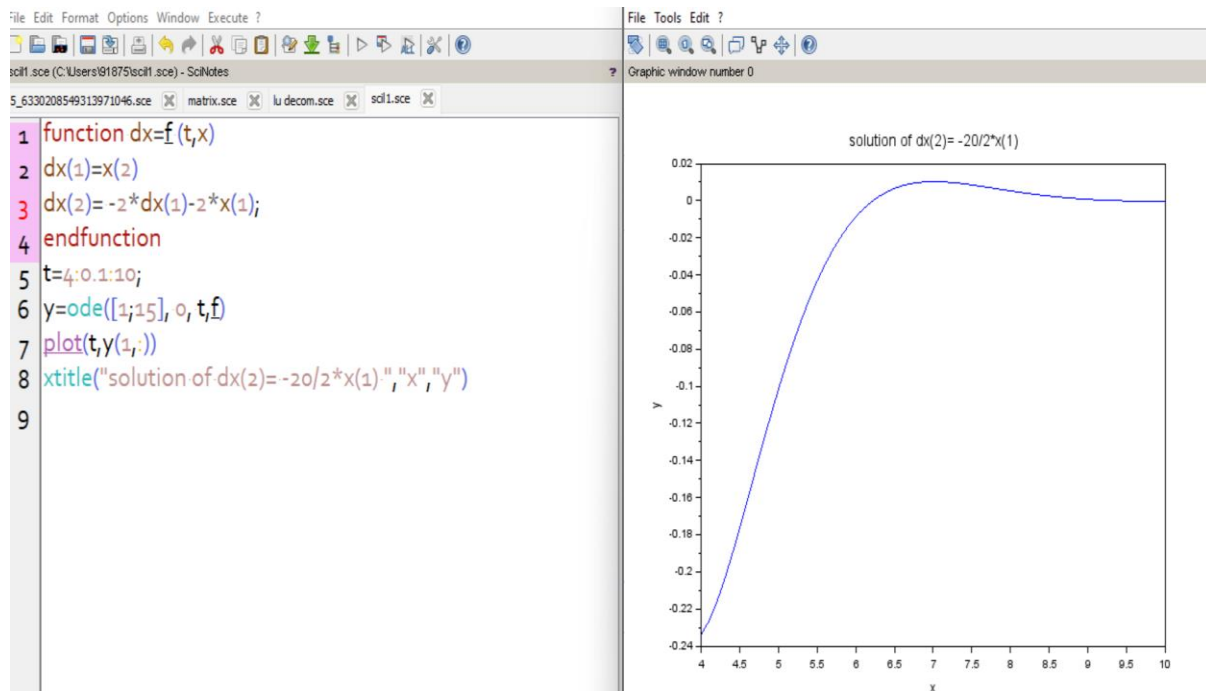
GRAPHICAL REPRESENTATION:



2.



3.



RESULT: Theoretically solution of $Y'' + 2y' + 2y = 0$, $2y'' + 20y = 0$, $Y'' + 2y' - 15y = 0$ is also verified through scilab software and solution of these equations is also graphically verified.