Scilab Practical-1 Laplace Transform

Sample Question

**Ques**: .Draw the surface plot of Laplace Transfrom of following function keeping s=σ+j ω

**Code:**

clear; clc;

t=0:0.01:5; // function is defined in this range//

f=sin((4\*t)+3);

a=1; //variable chosen to define the loop for sigma //

for sigma=-0.5:0.01:0.5, //range for sigma is required to plot the graph, format is initial value:increament:final value//

b=1; //variable chosen to define the loop for omega //

for omega =-0.5:0.01:0.5,

fr=f.\*exp(-sigma\*t).\*cos(omega\*t); //real part of integrand //

ir(a,b)=inttrap(t,fr); //command to find integration of real part of integrand using trapezoidal rule//

fi=f.\*exp(-sigma\*t).\*sin(omega\*t);

li(a,b)=inttrap (t,fi);

magnitude (a,b)=abs(ir(a,b)+%i\*li(a,b)); //evaluation of integral including real and imaginary part//

b=b+1; end;

a=a+1; end;

sigma=-0.5:0.01:0.5;

omega=-0.5:0.01:0.5;

plot3d(sigma,omega,magnitude) // plot3d is to be used to plot 3 variables and plot2d to plot 2 variables //

Dear All,

You have to upload the file in the following manner. Name the file as

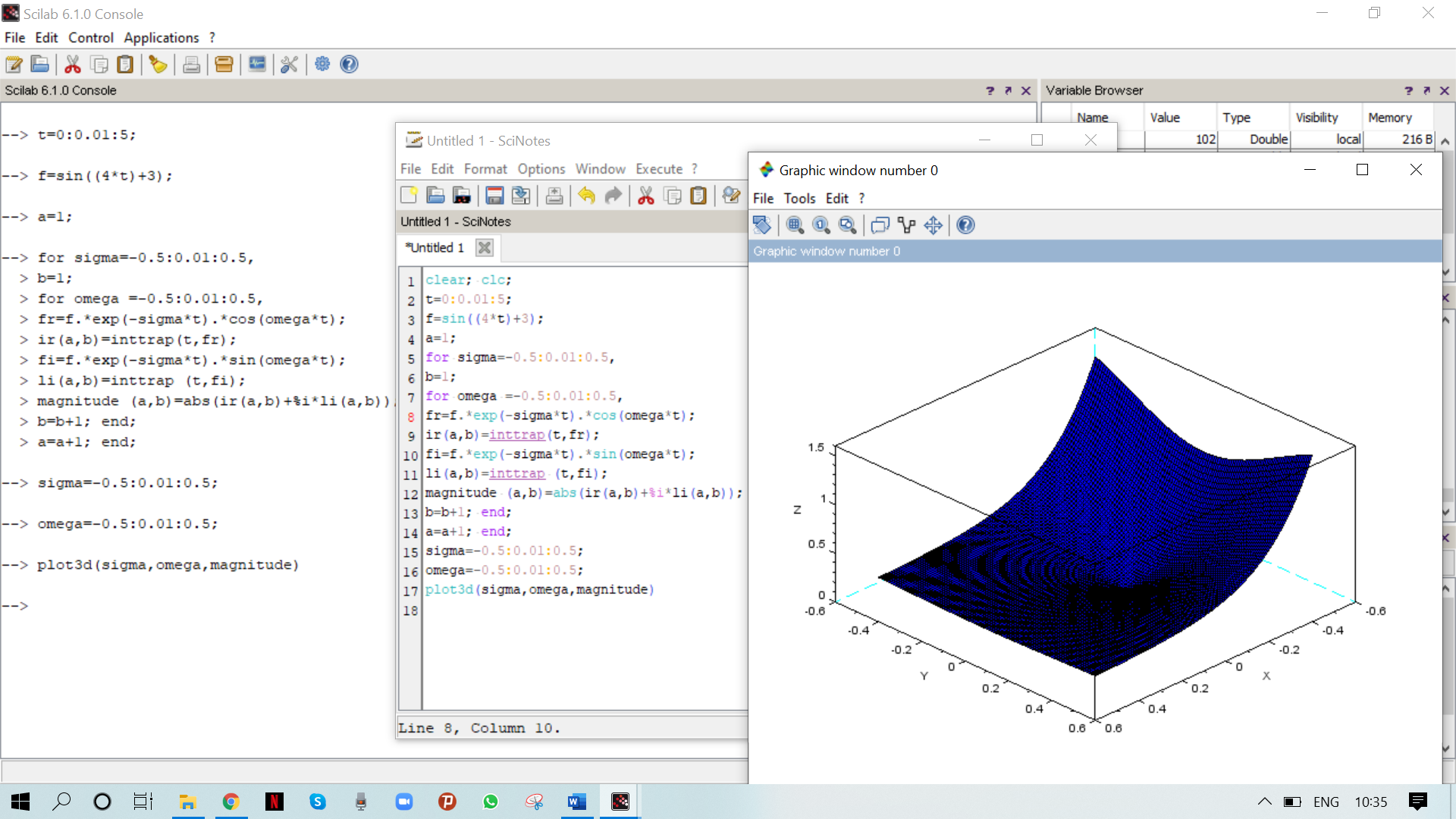
batch\_P1\_roll no\_first name

**Name**

**Batch and Roll no**

**Ques 1** Draw the surface plot of Laplace Transfrom of following function keeping s=σ+j ω

**Output:**



**Code on Scinotes**

clear; clc;

t=0:0.01:5;

f=sin((4\*t)+3);

a=1;

for sigma=-0.5:0.01:0.5,

b=1;

for omega =-0.5:0.01:0.5,

fr=f.\*exp(-sigma\*t).\*cos(omega\*t);

ir(a,b)=inttrap(t,fr);

fi=f.\*exp(-sigma\*t).\*sin(omega\*t);

li(a,b)=inttrap (t,fi);

magnitude (a,b)=abs(ir(a,b)+%i\*li(a,b));

b=b+1; end;

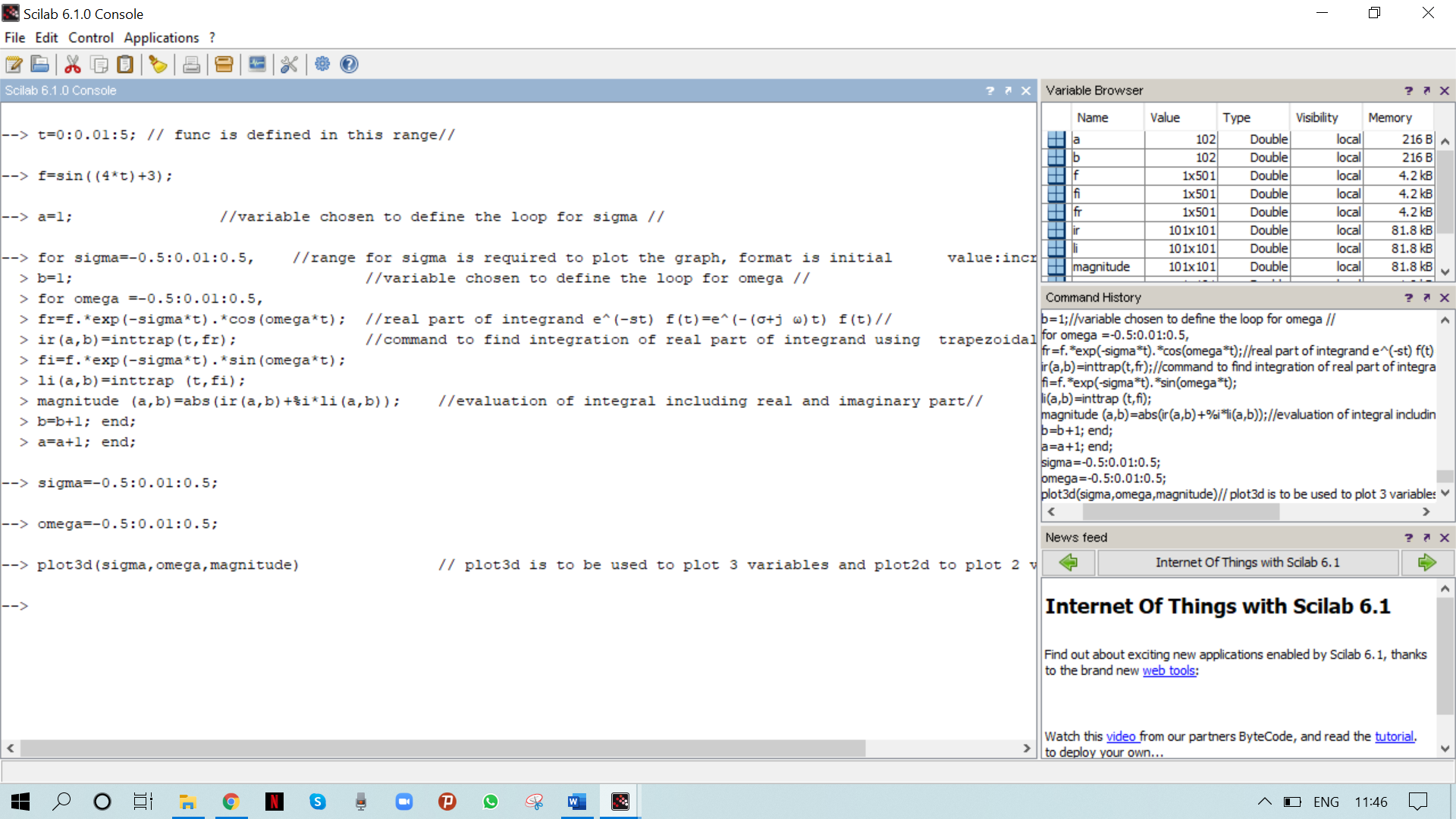
a=a+1; end;

sigma=-0.5:0.01:0.5;

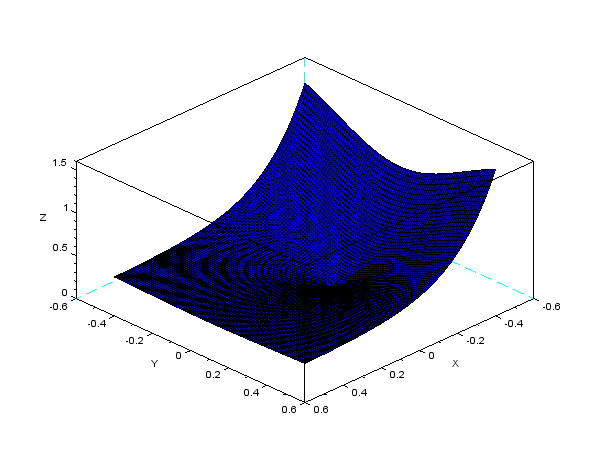
omega=-0.5:0.01:0.5;

plot3d(sigma,omega,magnitude)

**Console Window**



**Graphic window**

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**Note: to paste the graph, click on copy to clipboard in file in graphic window and give the command paste here.**