SVKM’S

DWARKADAS J.SANGHVI COLLEGE OF ENGINEERING

SUBJECT: APPLIED MATHEMATICS-1(SCILAB PROGRAMMING)

SEESION: JULY’2012-DEC’2012

NAME OF EXERCISE:GAUSS SIEDEL METHOD

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QUESTION: Solve the following system of eqn : 28x+4y-z=32;2x+17y+4z=24;x+3y+10z=24

PROGRAM:

a=input('enter matrix element a=')*//coefficient matrix*

b=input('enter matrix element b=')*//column matrix*

i=input('enter initial values i=')*//initial values of x,y,z*

for j=1:5 *//no of iterations*

x=(b(1)-(a(1,2)\*i(2))-(a(1,3)\*i(3)))/a(1,1)

i(1)=x

y=(b(2)-(a(2,1)\*i(1))-(a(2,3)\*i(3)))/a(2,2)

i(2)=y

z=(b(3)-(a(3,1)\*i(1))-(a(3,2)\*i(2)))/a(3,3)

i(3)=z

end

disp(a,'a=')

disp(b,'b=')

disp(i,'X=[x,y,z]')

INPUT:

enter matrix element a=[28 4 -1;2 17 4;1 3 10]

enter matrix element b=[32;35;24]

enter initial values i=[0 0 0]

OUTPUT:

a= b= X=[x,y,z]

28. 4. - 1. 32. 0.9935894 1.5069742 1.8485488

2. 17. 4 35.

1. 3. 10. 24.