Assignment 03

Bajrang 363

Question 1:

Code

Output

Question 2 :

Code

Output

Question 03 :

Code

function **X**=GAUSS\_SEIDAL\_METHOD(**A**, **B**)

[n,n] = size(**A**)

**B** = **B**';

[r,s] = size(**B**)

*// defining solution set first row is defined as 1111 for starting the while loop*

s = [ones(1,n); zeros(1,n)];

*// defining the tolerence value*

tol = 10^(-4)

*// loop when difference of two rows is greater than the tolerance*

itr = 1;

while (norm(s(2,:) - s(1,:)) >= tol),

*// changing the first row with second row of solution set*

s(1,:) = s(2,:);

*// for loop from 1-n*

for i = 1:n

*// value which has to be reduced from B(i)*

r = 0;

for j = 1:n

if i == j then

continue;

end

r = r + **A**(i,j)\*s(2,j);

end

s(2,i) = (**B**(i) - r)/**A**(i,i);

end

z(itr,:) = s(2,:)

itr = itr+1

end

disp(itr, "No of iterations are ")

disp(z, "z = ")

**X** = s(2,:)

A = [10,2,-1; -3,-6,2; 1,1,5];

B = [27; -61.5; -21.5]

X = GAUSS\_SEIDAL\_METHOD(A,B);

disp(X, "X = ")

v = ["x1 = "; "x2 = "; "x3 = "]

mprintf("%s%.2f\n",v,X')

Y = GAUSS\_ELIMINATION\_METHOD(A,B);

disp(Y, "Y = ")

mprintf("%s%.2f\n",v,Y)

Output

--> exec('C:\Users\system13\Desktop\B\_363\Assignment3\Question03.sce', -1)

No of iterations are

8.

z =

2.7 8.9 -6.62

0.258 7.9143333 -5.9344667

0.5236867 8.0100011 -6.0067376

0.497326 7.9990911 -5.9992834

0.5002534 8.0001121 -6.0000731

0.4999703 7.9999905 -5.9999922

0.5000027 8.0000013 -6.0000008

X =

0.5000027 8.0000013 -6.0000008

x1 = 0.50

x2 = 8.00

x3 = -6.00

C=

10. 2. -1. 27.

0. -5.4 1.7 -53.4

0. 0. 5.3518519 -32.111111

Y =

0.5

8.

-6.

x1 = 0.50

x2 = 8.00

x3 = -6.00