**EXPERIMENT – 4(b)**

**Aim:** Exercise to solve equations by Gauss Jordan Method in Scilab.

**Theory:**

**Gauss Jordan Method:**

1. Create a new system of linear equations with a 4x4 coefficient matrix and a 4x1 constant matrix.
2. Develop a Scilab script to apply the Gauss-Jordan method to solve the system.
3. Run the script and output the reduced row-echelon form and the solution vector.

**Program:**

function [x] = gaussJordan(A, b)

n = length(b)

Ab = [A, b]

for k = 1:n

pivot = Ab(k,k);

Ab(k,:) = Ab(k,:) / pivot

for i = 1:n

if i ~= k

factor = Ab(i,k)

Ab(i,:) = Ab(i,:) - factor \* Ab(k,:)

end

end

end

x = Ab(:, n+1);

end

A = [2 1 3 4; -1 3 2 1; 4 2 1 5; 3 -2 4 6];

b = [10; 13; 12; 31];

solution = gaussJordan(A, b);

disp("Solution using Gauss-Jordan method:"); disp(solution);

**Output:**

