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Please indicate your answers by entering the option ((i), (ii), (iii) or (iv)) where asked. You should append the completed document as a pdf with your typewritten worked solutions including MATLAB code) and upload to Blackboard by Friday 22nd of March 2019.

Q 4.23

(i)

L =

1.5000	0	0	0
-2.0000	1.0000	0	0
0.5000	1.0000	1.5000	0
-2.0000	3.5000	-0.5000	1.0000

U =

4.0000	-1.0000	3.0000	2.0000
0	-1.0000	3.0000	0.5000
0	0	2.0000	1.0000
0	0	0	3.0000

(ii)

L =

1.0000	0	0	0
-2.0000	1.0000	0	0
0.5000	1.5000	1.0000	0
-2.0000	3.0000	-0.5000	1.0000

U =

4.0000	-1.0000	3.0000	2.0000
0	-2.0000	3.0000	0.5000
0	0	4.0000	2.0000
0	0	0	3.0000

(iii)

L =

1.5000	0	0	0
-2.0000	1.0000	0	0
0.5000	1.0000	1.0000	0
-2.0000	2.0000	-0.5000	1.0000

U =

3.0000	-1.5000	3.0000	2.0000
0	-2.0000	3.0000	0.5000
0	0	4.0000	2.5000
0	0	0	1.0000

(iv)

L =

1.5000	0	0	0
-2.0000	1.5000	0	0
0.5000	1.5000	1.5000	0
-2.0000	3.0000	-0.5000	1.5000

U =

4.0000	-1.0000	3.0000	2.0000
0	-2.0000	3.0000	0.5000
0	0	4.0000	2.0000
0	0	0	2.0000

Your Answer ((i) – (iv)): **(ii)**

Code:

```
% Creating function LUdecompgauss()
function [L,U] = LUdecompgauss(A)
% Getting dimensions of matrix
[m, n] = size(A);
% Making sure matrix is square..
if (m ~= n)
      disp("Square matrices only");
end
% Creating template for lower triagnular matrix..
L = zeros(m);
for i = 1:m
```

```
   L(i,i) = 1;
end
% Creating copy of matrix..
U = A;

depth = 1;
for i = 1:m
      for j = 1:n
      if i == j
            temp = depth;
            while temp < m
                  temp = temp + 1;
                  constant = U(temp,j)/U(i,j);
                  for x = 1:m
                  U(temp,x) = U(temp,x) - (constant*U(i,x));
                  end
                  L(temp,j) = constant;
            end
      end
      end
      depth = depth + 1;
end

disp(L);
disp(U);
```

Q 5.17

You need only to indicate the best team and the worst team (from teams 1 to 6).

Your Answers: **Best: Team 2 and 5.** **Worst: Team 1.**