**LAB REPORT NO 2**



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“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Submitted to:

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Data:(01,05,2021)

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**Task 1: -**

disp('1st task ');

A=[13 6 9;1 4 8; 2 8 17]

B=[A(:,1), A(:,1)-A(:,2), A(:,2)-A(:,3)]

**Output: -**

1st task

A =

13 6 9

1 4 8

2 8 17

B =

13 7 -3

1 -3 -4

2 -6 -9

**Task 2: -**

disp('2nd task ');

ran1=rand(1,2500);

ran2=rand(1,2500);

sum=ran1+ran2;

disp(sum);

**Task 3: -**

disp('3rd task ');

range=-65.25:0.25:69.75

**Task 4: -**

disp('4th task ');

A=[-12,34,61,-9;65,78,90,12; 14,78,45,12; 60,25,3,8]

B=[34,67,8,9; 12,-91,12,9; 89,-8,0,2; 16,9,23,67]

C=A+B

D=A-B

E=A.\*B

F=A./B

G=A.^B

H=sin(A)

I=sqrt(B)

J=H\*I

**Task 5: -**

disp('5th task ');

A=[3 7 -4 12; -5 9 10 2;6 13 8 11;15 5 4 1]

B=A(1:4,2:4)

C=A(2:4,1:4)

D=A(1:2,2:4)

**Output: -**

5th task

A =

3 7 -4 12

-5 9 10 2

6 13 8 11

15 5 4 1

B =

7 -4 12

9 10 2

13 8 11

5 4 1

C =

-5 9 10 2

6 13 8 11

15 5 4 1

D =

7 -4 12

9 10 2

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**Task 6: -**

f = [-.5 .1 .5];

round(f)

fix(f)

ceil(f)

floor(f)

**Output: -**

ans =

-1 0 1

ans =

0 0 0

ans =

0 1 1

ans =

-1 0 0

**Task 7: -**

A=[-3 5;4 8]

sum(A)

prod(A)

length(A)

size(A)

**Output: -**

A =

-3 5

4 8

ans =

1 13

ans =

-12 40

ans =

2

ans =

2 2

**Task 08:  
The end command is used to access the last row or column of a matrix. Use end command to delete and update the last row and column of the following matrix.  
Matrix A = [3 23 34 12 34 5 56 23; 12 34 34 32 23 23 45 1; 67 23 2 4 4 5 6 456; 4 5 1 1 2 34 45 56;  67 67 45 67 78 7 8 5; 6 35 5 3 5 56 7 8]  
Hint:  
For deleting a column use A(3 , :)=[];  
For deleting last column use A(: , end)=[];  
and vice versa.**%task 8

A = [3 23 34 12 34 5 56 23; 12 34 34 32 23 23 45 1; 67 23 2 4 4 5 6 456; 4 5 1 1 2 34 45 56; 67 67 45 67 78 7 8 5; 6 35 5 3 5 56 7 8]

delete=A(1:5,1:7)

**output:-**

A =

3 23 34 12 34 5 56 23

12 34 34 32 23 23 45 1

67 23 2 4 4 5 6 456

4 5 1 1 2 34 45 56

67 67 45 67 78 7 8 5

6 35 5 3 5 56 7 8

delete =

3 23 34 12 34 5 56

12 34 34 32 23 23 45

67 23 2 4 4 5 6

4 5 1 1 2 34 45

67 67 45 67 78 7 8

**Task 09:  
Try the following commands in MatLab and comment on them:  
(i)    A(3,end)   
(ii)   A(:)  
(iii)  A(: , end)  
(iv)  Y = linspace(20,100)     
(v)   Y = linspace(20,100,50)**

%task 9

A(3,end)

A(:) %print array in one colonm

A(:,end) %print last colonm

A(2,6)

Y=linspace(20,100) %print array in the range of 20-100 within 100 colonms

Y=linspace(20,100,50) %print array in range of 20-100 with 50 colonmscolonm

**Task 10:  
Use the inverse (inv(A)) function to find the inverse of A for finding the unknowns for Linear equation.  
  
x + 2y + 3z = 1  
4x + 5y + 6z = 2   
7x + 8y = 1    
X= [x y z]  
A= [1 2 3 ;4 5 6; 7 8 9]  
b= [1;2;3]  
Ax=b  
Hint:   
x = inv(A)\*b or   
  
x = A\b**

%task N0 10

A= [1 2 3 ;4 5 6; 7 8 9]

b= [1;2;3]

formula=inv(A)\*b

x=formula(1)

y=formula(2)

z=formula(3)

X= [x; y; z]

**Output: -**

A =

1 2 3

4 5 6

7 8 9

b =

1

2

3

formula =

0

4

0

x =

0

y =

4

z =

0

X =

0

4

0

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**Task 11:  
  
Solve Task 10 by taking the equations from user.  
Hint: Take the matrix A and b from user.**

%task N0 11

A=input('enter a non singular matrix A ');

B=input('enter matrix b ');

formula=inv(A)\*b

x=formula(1)

y=formula(2)

z=formula(3)

X= [x y z]

**Output: -**

enter a non singular matrix A [1 2 2 ;4 5 3; 7 8 1]

enter matrix b [3;5;2]

formula =

-0.3333

0.6667

0

x =

-0.3333

y =

0.6667

z =

0

X =

-0.3333 0.6667 0

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