

MATLAB Quiz/Midterm

Sample Questions # 1

1

2

Sample problem #1

```
a=eye(4);a(3,:)=[];
sum=0;
for i=1:min(size(a))
    for j=1:min(size(a))
        sum=sum+a(i,j);
    end
end
sum
```

2

3

Sample problem #2

```
v1=[1 2]; v2=[0 -1 -2]; v3 = [0; -1; -2] ;
res=[v3', v2]

% Use "fprintf()" to output the sum of
% the elements as follows as follows

% The operation's result is res = ....

fprintf(.....
```

3

4

Sample problem #3

```
v1=[1 2]; v2=[0 -1 -2]; v3 = [0; -1; -2] ;
res=[v3, v2]

% is the above correct ?

% Use "fprintf()" to output the sum
% of the elements as follows as follows
% The operation's result is res = ....

fprintf(.....
```

4

Sample problem #4

```
v1=[1 2]; v2=[0 -1 -2]; v3 = [0; -1; -2] ;
res=[v3', v2]

% is the above correct ?

% Use "fprintf()" to output the sum
% of the elements as follows as follows
% The operation's result is res = ....

fprintf(.....
```

Sample problem #5

Given the following matrix, a $a = [1\ 2\ 3\ -1; 50\ 5\ -6\ 9];$

$$a = \begin{bmatrix} 1 & 2 & 3 & -1 \\ 0 & 5 & -6 & 9 \end{bmatrix}$$

find and show in matrix form the resulting matrices in each case:

b=a(:,4:-2:2)

c=a; c(:,3:end)=[]

d=a; d(3,5)=1

e=eye(3); e(4,:)=a(7).*ones(1,3)

f=a<0 | a>4

Sample problem #6

Write a Matlab function, named as **compute_diagonal_range**, which finds the *minimum* and *maximum* values of the diagonal elements for a given square *matrix*.

Example: For the following matrix your function should return 1 and 9 respectively

```
1  2  3  4
3  4  5  6
7  8  9 10
6  7  8  9
```

```
function [min_diag max_diag] = compute_diagonal_range(M)
A = diag(M);
min_diag = min(A);
max_diag = max(A);
```

Sample problem #7

Write the screen display for the following script and associated function

```
% script
m = 4
n = 5
[a,b] = confusel(m,n)

...
function [a,b] = confusel(m,n)
a = 2*m;
b = 3*n-m;
```

Sample problem #8

The following lines show collections of characters (e.g., m3, !x) that either can or can not be valid names of MATLAB variables. Identify the lines which contain EXCLUSIVELY symbols that can be valid names. Write in the exam book the letters corresponding to these lines (e.g., A, B, ...). Write "None" if no line meets this criterion.

- A !x, m3, 3m, abc, a_B
- B m3, 3_m, m_3, aB
- C AA, size, a-b, ab
- D AA, BB, m3, m_3,a_b