Coding for Financial Applications Test 1, October 4th, 2018

Name ....

To pass the test you must answer correctly to at least 8 of the following 10 questions. Time: 30 minutes.

1. What is the result after the following commands are typed into MATLAB?

   ```
   >> x = [42 10 5 26 7];
   >> test=(x>15)&(x<40)
   ```

   a.
   ```
   test =
     1x5 logical array
        0   0   0   1   0
   ```

   b.
   ```
   test =
     1x5 logical array
        1   1   1   1   1
   ```

   c. Error

   d.
   ```
   test =
     1x5 logical array
        0   0   0   0   0
   ```

   e. none of the above

2. What is the result after the following command is typed into MATLAB?

   ```
   >> A=[1 2;3 4].*[2;3]
   ```

   a.
   ```
   A =

         8
        18
   ```

   b.
   ```
   A =

         2     4
         9    12
   ```

   c. Error

d.

```
A =

   2     6
   6    12
```

e. none of the above

3. What is the result after the following commands are typed into MATLAB?

```
>>limit = 0.75;
>>A = rand(5,1)
A =

    0.4218
    0.9157
    0.7922
    0.9595
    0.6557

if A > limit
    disp('All values are below the limit.')
else
    disp('Not all values are below the limit.')
end
```

a. Error

b. Not all values are below the limit.

c.

```
A =

    0.9157
    0.7922
    0.9595
    0.6557
```

d. All values are below the limit.

e. None of the above

4. Given the following matrix

```
A =

   16     2     3    13
    5    11    10     8
    9     7     6    12
    4    14    15     1
```

What you will get when you type the following command in MATLAB?

```
>>A(1:3,2)
```

a.

```
ans =

     2
    11
     7
```

b. Error

c.

```
ans =

     5    11    10
```

d.

```
ans =

     5    11    10
     5    11    10
```

e. None of the above

5. What the following command does?

```
>>y1 = linspace(-2,2,7)
```

a. Gives an error

b. Create a vector of 2 evenly spaced points in the interval [-2,7]

c. Create a vector of 7 evenly spaced points in the interval [-2,2]

d. Create a vector of 3 evenly spaced points, as following:

```
y1 =

   -2     2     7
```

e. None of the above

6. What is the result after the following commands are typed into MATLAB?

```
>>for v = 1.0:-0.2:0.0
   disp(v)
end
```

a.

```
     1

     0.8000

     0.6000

     0.4000

     0.2000

     0
```

b.

```
    1

    -0.2

    0
```

c. Error

d.

```
v =

    1.0000    0.8000    0.6000    0.4000    0.2000        0
```

e. None of the above

7. Given the following vector:

```
>>v = [31;12;8;29;36];
```

what will be the result after the following commands are typed into MATLAB?

```
>>[m,idx] = max(v)
```

a. an error message

b.

```
[m,idx] = 36
```

c.

```
m =

    5


idx =

    36
```

d.

```
m =

    36


idx =

    5
```

e. None of the above

8. What is the result after the following command is typed into MATLAB?

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

a.

```
A =

    -1    -1
     1     1
     3     3
```

b.

```
A =

    -1     0
     0     1
     3     3
```

c. Error

d.

```
A =

     1     2
     3     4
     5     6
     2     3
```

e. none of the above

9. Given the following vector:

```
>> v1=[54 33 4 78 32]

v1 =

    54    33     4    78    32
```

Which will be the result of the following command?

```
>>v=v1(v1>6)
```

a. Gives an error message

b. Extracts all the elements of v1 greater than 6 and store them in a new vector called 'v'

c. Create a new vector called 'v' of random elements, greater than 6

d. Create a new vector called 'v' of random elements, each greater than v1 elements

e. None of the above

10. Which of the following command typed in MATLAB will give you the following result?

```
x =

     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
     0     0     0
```

a.

```
>> x=rand(0)
```

b.

```
>> x=zeros(6;3)
```

c.

```
>> x=zeros(3,6)
```

d.

```
>> x=zeros(6,3)
```

e. None of the above