

الفرقة الرابعة شعب
تخلف من الفرقة الثالثة
كلية العلوم
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نموذج اجابة – نصف ورقة
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Benha University
Second Term- Exam 2012-2013
Class: 3rd year-retardation
Subject: Introduction to Computers

Faculty of Science
Date: 18-5-2013
Time Allowed: 1 Hours
Examiner: Dr. Abdelhameed

Answer the following questions:

Question 1:

Given the arrays $x = [1 \ -1 \ 2 \ -2 \ 0 \ 3]$ and $A = [-1 \ 2 \ 0; 2 \ 0 \ -1; 1 \ -1 \ 2]$. What is the result of the following statements?

- | | | |
|------------------------------|------------------------------|-----------------------------|
| 1) $A(1,:)/A(2,:)$ | 2) $A(1:2:3, :)$ | 3) $y = x(\text{end}:-1:3)$ |
| 4) $A(:,1) = []$ | 5) $\text{diag}(A)$ | 6) $A.^2$ |
| 7) $\text{size}(A)$ | 8) $\text{sum}([x,2,3])$ | 9) $\text{length}(x)$ |
| 10) $\text{mean}(x)$ | 11) $[d,n]=\text{max}(A(:))$ | 12) $[A; x(1:3)]$ |
| 13) $A(:,3) + [0 \ -1 \ 2]'$ | 14) $A-2*\text{eye}(3)$ | 15) who |
| 16) whos | 17) $\text{min}(x)$ | 18) $z = \text{sort}(x)$ |
| 19) $\text{all}(x)$ | 20) $S = \text{diag}(x)$ | |

Question 2:

a) Given $y = 1/30$, complete the following sentences:

- 1) `>> format short, y =`
- 2) `>> format long, y =`
- 3) `>> format short g, y =`
- 4) `>> format bank, y =`
- 5) `>> floor(y) =`
- 6) `>> round(y) =`
- 7) `>> ceil(y) =`
- 8) `>> fix(y) =`

b) What is the value after executing the following code?

```
for i = 1:3
    if (i==1)
        y = i*2;
    elseif (i>2)
        y = i+3;
    else
        y = i^3;
    end
end
```

Model Answer

Question 1:

a) `>> x = [0 1 2 -1 3 4], A = [-1 2 0;3 0 -1;4 -1 1]`

1) `A(1,:)./A(2,:)`

`ans =`

```
-0.5000    Inf    0
```

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

`ans =`

```
-1    2    0
 1   -1    2
```

3) `y = x(end:-1:3)`

`y =`

```
3    0   -2    2
```

4) `A(:,1) = []`

`A =`

```
2    0
 0   -1
-1    2
```

5) `diag(A)`

`ans =`

```
-1
 0
 2
```

6) `A.^2`

`ans =`

```
1    4    0
 4    0    1
 1    1    4
```

7) size(A)

ans =

3 3

8) sum([x,2,3])

ans =

8

9) length(x)

ans =

6

10) mean(x)

ans =

0.5000

11) [d,n]=max(A(:))

d =

2

n =

2

12) [A; x(1:3)]

ans =

-1 2 0

2 0 -1

1 -1 2

1 -1 2

13) A(:,3) + [0 -1 2]'

ans =

0

-2

4

14) $A - 2 * \text{eye}(3)$

ans =

```
-3  2  0
 2 -2 -1
 1 -1  0
```

15) who

Your variables are:

x A

16) whos

Name	Size	Bytes	Class
A	3x3	72	double
x	1x6	48	double

17) $\text{min}(x)$

ans =

-2

18) $z = \text{sort}(x)$

z =

```
-2 -1  0  1  2  3
```

19) $\text{all}(x)$

ans =

0

20) $S = \text{diag}(x)$

S =

```
1  0  0  0  0  0
0 -1  0  0  0  0
0  0  2  0  0  0
0  0  0 -2  0  0
0  0  0  0  0  0
0  0  0  0  0  3
```

Question 2:

a) $y = 1/30$

1) \gg format short, $y = 0.0333$

2) \gg format long, $y = 0.0333333333333333$

3) \gg format short g, $y = 0.033333$

4) \gg format bank, $y = 0.03$

5) \gg floor(y) = 0

6) \gg round(y) = 0

7) \gg ceil(y) = 1

8) \gg fix(y) = 0

b)

$i = 1, y = i*2 = 1*2 = 2$

$i = 2, y = i^3 = 2^3 = 8$

$i = 3, y = i+3 = 3+3 = 6$

The result is

$y =$

2 8 6