

الفرقة الثالثة شعب  
كلية العلوم  
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نموذج اجابة – نصف ورقة  
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Benha University  
Second Term- Exam 2012-2013  
Class: 3<sup>rd</sup> year  
Subject: Computer

Faculty of Science  
Date: 13-6-2013  
Time Allowed: 1 Hour  
Examiner: Dr. Abdelhameed

Answer the following questions:

Question 1:

Given the arrays

$x = [0 \ -1 \ 3 \ -2 \ -3 \ 2]$  and  $A = [-1 \ 2 \ 0 \ -1; -2 \ 0 \ -3 \ 1; 0 \ -1 \ 2 \ 3; -1 \ 0 \ 4 \ 5]$ .

What is the result of the following statements?

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

Question 2:

a) Given  $y = 22/7$ , 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 output after executing the following code?

```
n = -3;
while (n <= 2)
    if (n== -3)
        y = n*2;
    elseif (n >= -2 & n <= 0)
        y = n+3;
    else
        y = n^3;
    end
    n = n + 1;
end
```

## Model Answer

### Question 1:

a) >> x = [0 -1 3 -2 -3 2],

>> A = [-1 2 0 -1;-2 0 -3 1;0 -1 2 3;-1 0 4 5]

1) A(2,:)./A(3,:)

ans =

-Inf      0   -1.5000   0.3333

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

ans =

-1   0

-2   -3

0   2

-1   4

3) y = x(end:-1:2)

y =

2   -3   -2   3   -1

4) A(:,4) = []

A =

-1   2   0

-2   0   -3

0   -1   2

-1   0   4

5) diag(A)

ans =

-1

0

2

5

6)  $A.^2$

ans =

```
1  4  0  1
4  0  9  1
0  1  4  9
1  0 16 25
```

7) size(A)

ans =

```
4  4
```

8) sum([x,1,-5])

ans =

```
-5
```

9) length(x)

ans =

```
6
```

10) mean(x)

ans =

```
-0.1667
```

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

d =

```
5
```

n =

```
16
```

12) [A(1,:); x(1:4)]

ans =

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

13)  $A(2,:) + [1 \ 0 \ -1 \ 2]$

ans =

```
-1  0 -4  3
```

14)  $A+2*\text{eye}(4)$

ans =

```
 1  2  0 -1
-2  2 -3  1
 0 -1  4  3
-1  0  4  7
```

15) who

Your variables are:

x A

16) whos

Name	Size	Bytes	Class
A	4x4	128	double
x	1x6	48	double

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

ans =

```
-3
```

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

z =

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

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

ans =

```
0
```

20)  $S = (x(1:4) > -1) \& A(2,:)$

$S =$

1 0 1 0

Question 2:

a)  $y = 22/7$

1)  $\gg$  format short,  $y = 3.1429$

2)  $\gg$  format long,  $y = 3.142857142857143$

3)  $\gg$  format short g,  $y = 3.1429$

4)  $\gg$  format bank,  $y = 3.14$

5)  $\gg$  floor( $y$ ) = 3.00

6)  $\gg$  round( $y$ ) = 3.00

7)  $\gg$  ceil( $y$ ) = 4.00

8)  $\gg$  fix( $y$ ) = 3.00

b)

$n = -3, \rightarrow y = n * 2 = -3*2 = -6$

$n = -2, \rightarrow y = n + 3 = -2+3 = 1$

$n = -1, \rightarrow y = n + 3 = -1+3 = 2$

$n = 0, \rightarrow y = n + 3 = 0+3 = 3$

$n = 1, \rightarrow y = n ^ 3 = 1^3 = 1$

$n = 2, \rightarrow y = n ^ 3 = 2^3 = 8$

The result is

$y =$

-6 1 2 3 1 8