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كلية التربية
مادة تخلف من الفرقة الثالثة
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نموذج اجابة – ورقة كاملة
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Benha University | Faculty of Education
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Class: 3rd year-retardation | Time Allowed: 2 Hours
Subject: Introduction to Computers | Examiner: Dr. Abdelhameed

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Answer the following questions:

Question 1:

a) Given the arrays x = [0 1 2 -1 3 4] and A = [-1 2 0;3 0 -1;4 -1 1]. What is the result of the following statements?

1) A(3,:)./A(2,:) 2) A(:,1:2:3) 3) y = x(end:-1:3) 4) A(2,:) = []
5) diag(A) 6) A .^3 7) size(A) 8) sum([x,2,3])
9) length(x) 10) mean(x) 11) [d,n]=max(A(:)) 12) [A; x(1:3)]
13) A(:,2) + [0 -1 2]' 14) A-2*eye(3)

b) Given x = [-2 0 1 3 -1 2] and y = [1 -1 0 -2 1 2], what is the result of the following commands:

1) who 2) whos 3) z = (x<1) | (y > 1)
4) x >= y 5) x==y 6) sum(x <= y)
7) (x == 0)&(y ~= 0) 8) min(x) 9) z = sort(x)
10) S = diag(y) 11) all(x) 12) any(x)

Question 2:

What is the value after executing the following code?

```
for i = 1:8
    if (i==1)
       y = i*2;
    elseif (i>3  & i<=6)
       y = i+3;
     elseif (i >= 7)
       y = i-3;
     else
       y  = i^3;
    end
end
```

Question 3:

a) Given y = pi/2, 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) Write a Matlab program to compute the sequence

$$\frac{1}{3}+\frac{1}{5}+\frac{1}{7}+\cdots+\frac{1}{21}$$

With my best wishes

Model Answer

Question 1:

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

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

```
ans =
   1.3333      -Inf    -1.0000
```

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

```
ans =
    -1     0
     3    -1
     4     1
```

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

```
y =
     4     3    -1     2
```

4) A(2,:) = []

```
A =
    -1     2     0
     4    -1     1
```

5) diag(A)

```
ans =
    -1
     0
     1
```

6) A.^3

```
ans =
    -1     8     0
    27     0    -1
    64    -1     1
```

```
7) size(A)
ans =
     3     3

8) sum([x,2,3])
ans =
     14

9) length(x)
ans =
    6

10) mean(x)
ans =
    1.5000

11) [d,n]=max(A(:))
d =
     4
n =
     3

11) [A; x(1:3)]
ans =
    -1     2     0
     3     0    -1
     4    -1     1
     0     1     2

12) A(:,2) + [0  -1  2]'
ans =
     2
```

```
    -1
     1
13) A(1,:) + [0  -1  2]
ans =
    -1    -1     2
14) A-2*eye(3)
ans =
    -3     2     0
     3    -2    -1
     4    -1    -1
```

b) x = [-2 0 1 3 -1 2] and y = [1 -1 0 -2 1 2]

```
1) who
Your variables are:
x   y

2) whos
Name      Size      Bytes      Class
  x         1x6         48      double
  y         1x6         48      double

3)  z = (x<1) | (y > 1)
z =
     1     1     0     0     1     1

4) x >= y
ans =
     0     1     1     1     0     1

5) x==y
ans =
     0     0     0     0     0     1
```

6) sum(x <= y)
ans =
    3

7) (x == 0)&(y ~= 0)
ans =
    0   1   0   0   0   0

8) min(x)
ans =
   -2

9) z = sort(x)
z =
   -2   -1   0   1   2   3

10) S = diag(x)
S =
    1   0   0   0   0   0
    0   -1   0   0   0   0
    0   0   0   0   0   0
    0   0   0   -2   0   0
    0   0   0   0   1   0
    0   0   0   0   0   2

11) all(x)
ans =
    0

12) any(x)
ans =
    1

Question 2:

a) i = 1, y = i*2 = 1*2 = 2
   i = 2, y = i^3 = 2^3 = 8
   i = 3, y = i^3 = 3^3 = 27
   i = 4, y = i+3 = 4+3 = 7
   i = 5, y = i+3 = 5+3 = 8
   i = 6, y = i+3 = 6+3 = 9
   i = 7, y = i-3 = 7-3 = 4
   i = 8, y = i-3 = 8-3 = 5

Question 3:

a) y = pi/2
1) >> format short, y = 1.5708
2) >> format long, y = 1.570796326794897
3) >> format short g, y = 1.5708
4) >> format bank, y = 1.57
5) >> floor(y) = 1
6) >> round(y) = 2
7) >> ceil(y) = 2
8) >> fix(y) = 1

b)

```
function sum=series(n)
sum =0;
for n = 1: n
   sum = sum + (1 / (2*n + 1));
end
disp('sum')
disp(sum)
end
```

To run the program from the command window, we put

```
>> sum=series(10)
```

```
sum =
    1.18
```