Final Example4 java1 – write in 2019

Q 1 : What is the output for the following code segments:

a)

```
String s ="Noura,M,D";
      for ( int i=0; i<s.length();i++){
      if(i<s.indexOf(','))
        System.out.print(Character.toUpperCase(s.charAt(i)));
        else
        System.out.print(Character.toLowerCase(s.charAt(i)));}
```

output:

NOURA,m,d

---

b)

```
public static double num=10;
public static void main (String args []){
Scanner read=new Scanner(System.in);
int num =3;double x;
for(int i=0;i<num;i++){
x=read.nextDouble();
System.out.println(filter(x));}}
public static double filter(double x){
double result;
if(Math.abs(x)>num)
   result=Math.ceil(x);
   else
   result=Math.floor(x);
   return result;}
```

output:

Input:	**output:**
-9.5	-10.0
-11.5	-11.0
-9.0	-9.0

c)

```
public static int x=1;
public static void main (String args []){
     System.out.println(power(4));
     power(5,3);
     if(x==1){
       int x=3;
       x=power(x);
        System.out.println(x);}
    System.out.println(x);}

 public static int power(double num){
      return ((int)(num*2)); }

 public static void power(double num ,int x){
      x=(int)(num*x);
       System.out.println(x);}
```

Output:

8

15

6

1

----

d)

```
public class Printer {
public int serialNum;
public string modelNum;
 public void print();{
System.out.println("serialNum:"+ serialNum +"  "+"modelNum:"+ modelNum);}
       }
public static void main (String args []){
   Printer printer1= new Printer();
   printer1.serialNum=12453;
   printer1.modelNum=" HPlaserJet10012";
   Printer printer2= new Printer();
   printer2=printer1;
   printer2.print();
   printer2.modelNum="Canon laser";
   printer1.print();
   printer1.serialNum=321;
   System.out.println("printer2 serialNum is " + printer2.serialNum );
```

Output:

serialNum:12453 modelNum: HPlaserJet10012

serialNum:12453 modelNum:Canon laser

printer2 serialNum is 321

Q 2 : find and correct errors in the following code:

```
1 import static java.lang.Math.*;import static java.lang.Character.*;
 2 public class errors{
 3 public static void main(String[] args){
 4    int a= abs(24);
 5    char capital = isUpperCase('c');
 6    String s="hello";
 7    System.out.println(method(s,2));}
 8 public int max (int a, int b){
 9      if (a>=b)
10         return a;
11         return b;}
12 public static boolean method(String s , char c){
13     if (method(1,2))
14         return true;
15         return false;}
16 public static void method(int a, int b){
17  System.out.println(max(8,9));
18    for(int i=0;i<a;i++)
19      for(int j=0;i<b;j++)
20         System.out.println('*');
21  public static void method(double d){
22     System.out.println(d+50);}
23       for(int k=0;k<3,k++)
24          System.out.println(i+""+j+""+k);}}
```

line	Error	Correction Or reason
5	isUpperCase is boolean method	Boolean capital = ….
8	Non static method so we cant call it from other static method	
13	Calling to void method	`method(1,2) ;`
19	i < b i is counter for outer loop	j < b
20	Close method }	
23	Variable i and j is not declare in method	

Q 3: write statements:

a) Give the method header for method called *instructions* which does not take any arguments and does not return a value.

public static void *instructions ()*

b) write a method *qualityPoints* that input a student's average and return 4 if the student's average is 90-100 ,3 if the average is 80-89,2 if the average is 70-79 , 1 if the average is 60-69 and 0 if the average is lower than 60.

```
public static int qualityPoints ()
{
Scanner in = new Scanner(System.in) ;
System.out.println("Enter average ");
double avr = in.nextDouble();

if( avr >= 90 && avr <= 100 )     return 4 ;
else
if( avr >= 80 && avr <= 89 )     return 3 ;
else
if( avr >= 70 && avr <= 79 )     return 2 ;
else
if( avr >= 60 && avr <= 69 )     return 1 ;
else
return 0;
}
```

==========

c) From the UML in front of you write the corresponding class . the method perform the following:

1- CalPerimeter(): calculate the perimeter rectangle.

2- CalArea():calculate the area of rectangle.

Hint : Perimeter can be obtained from(length + width)*2.Area can be obtained from . (length * width)

rectangle
+ length : double - width : double
+ CalPerimeter(): double + CalArea(): double

```
public class Rectangle {
public double length;
private double width;

public double calPrimeter()
{
    return  ( length + width ) * 2;
}

public double calArea()
{
    return length * width ;
}
}
```

==========

Q4: Programming problem

Write a complete java Program that reads a double X , an integer N and a string S then the Program calls tow overloaded methods :

a. the first method receives X and N then computes X. **Note** :The method must check and validate (يتحقق) that N is a positive number, if not if will convert (يحول) it..

Ex: X= 3.0 , N=2 output=9.0

b. The second method receives S and then return the index of the character with the least Unicode..

Ex: S=”java{ Programming}” output =”1”

```
import java.util.Scanner;
public class TestRectangle {
public static void main(String[] args) {
Scanner in = new Scanner(System.in) ;
System.out.println("Enter double x ");
double x = in.nextDouble();

System.out.println("Enter int N");
int N = in.nextInt();

System.out.println("Enter string S ");
String S = in.next();

System.out.println( Method( x , N ) );
System.out.println(Method( S ));

}

public static double Method( double x , int N )
{
if( N < 0 )
N = Math.abs(N) ;

return Math.pow(x, N) ;
}

public static int Method( String S )
{
char ch = S.charAt(0) ;

for( int i = 1 ; i < S.length() ; i++ )
if( S.charAt(i) < ch )
ch = S.charAt(i) ;


return  S.indexOf(ch) ;
}

}
```

==========

What is the output :

```
public static void main(String[] args) {
int[] a = { 8 , 16 , 32 , 48 };
halve2( a ) ;

for( int i = 0 ;i < a.length ;i++)
        System.out.print( a[i] + " ");
    System.out.println("");

}
public static int halve1(int x )
{
    return x / 2;
}

public static void halve2(int[] a )
{
    for( int i = 0 ;i < a.length ;i++)
        a[i] = halve1( a[i]);

    a = null;
}
```

output :

4 8 16 24

==========