

Course Title: Programming 1
Date: 25 / 05 / 2019
No. of Questions: 2 Questions
Time: 2 hours
Using Calculator (No)

University of Palestine



Final Exam
2nd semester 2018/2019
Total Grade: 50

Instructor Name: Eng. EmanAlajrami
Student No.: _____
Student Name: _____
College Name: IT
Dep. / Specialist: _____
Using Dictionary (No)

First Question

No. of Branches (5)

(30 marks)

1. Identify and correct the errors in the following programs: (10 marks)

a.

```
int[] list = new int[10];  
for (inti = 0; i<= list.length; i++) {  
    list[i] = i * 10;  
}
```

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b.

```
public class Test {  
    public static void main(String[] args) {  
        int[] x = new int[5];  
        for (inti = 0; i<x.length; i++)  
            x[i] = i;  
        System.out.println(x[i]);  
    }  
}
```

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.....

c.

```
int Sub( int x, int y )  
{  
    int result;  
    result = x - y;  
}
```

.....
.....

d.

```
public class Test1 {  
    public static void main(String[] args) {  
        double i = 1;  
        while (i<= 5) {  
            xMethod(i);  
            i++;  
        }  
    }  
  
    public static double xMethod(inti) {  
        i++;  
    }  
}
```

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2. Show the printout of the following code: (10 marks)

a.

```
class Test {  
    public static void main(String[] args) {  
        int[] list1 = {5, 4, 3, 2, 1};  
        int[] list2 = {1, 2, 3, 4, 5};  
        list2 = list1;  
        list1[0] = 0; list1[1] = 1; list2[2] = 2;  
  
        for (inti = list2.length - 1; i >= 0; i--)  
            System.out.print(list2[i] + " ");  
    }  
}
```

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b.

```
public class Test {  
    public static void main(String[] args) {  
        inti = 1;  
        while (i <= 3 ) {  
            int num = 1;  
            for (int j = 1; j <= i; j++) {  
                System.out.print(num + "***" + " ");  
                num *= 3;  
            }  
  
            System.out.println();  
            i++;  
        }  
    }  
}
```

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c.

```
public class Test {  
    public static void main(String[] args) {  
        int[] x = {0, 1, 2, 3, 4, 5};  
        xMethod(x, 5);  
    }  
  
    public static void xMethod(int[] x, int length) {  
        for (inti = 0; i< length; i++)  
            System.out.print(" " + x[i]);  
    }  
}
```

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d.

```
public class Test {  
    public static void main(String[] args) {  
        double[] numbers = {1, 4.3, 5.55, 3.4};  
        double[] x = numbers;  
        numbers[0] = 300;  
        System.out.println(x[0]);  
    }  
}
```

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3. Suppose array Test is `int[] Test = {1, 2, 3, 4, 5}`, what is `a[4] - a[2]`? (2 marks)

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4. Convert the following for loop into a do-while loop (2 marks)

```
int sum = 0;  
for (inti = 0; i< 100; i++) {  
    sum += i;  
}
```

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5. Analyze the following two programs a and b, find the output of each one and show the difference between the two methods call of swap. (6 marks)

```
a. public class Test {  
    public static void main(String[] args) {  
        int[] a = {1, 2};  
        swap(a);  
        System.out.println("a[0] = " + a[0] + " a[1] = " + a[1]);  
    }  
    public static void swap(int[] a) {  
        int temp = a[0];  
        a[0] = a[1];  
        a[1] = temp;  
    }  
}
```

```
b. public class Test {  
    public static void main(String[] args) {  
        int[] a = {1, 2};  
        swap(a[0], a[1]);  
        System.out.println("a[0] = " + a[0] + " a[1] = " + a[1]);  
    }  
    public static void swap(int n1, int n2) {  
        int temp = n1;  
        n1 = n2;  
        n2 = temp;  
    }  
}
```

Output of a:

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Output of b:

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Difference between a and b:

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Second Question	No. Of Branches (4)	20 Marks
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1. Write a Java method to compute and return the factorial of an integer n. (5 marks)
 Ex: 5! = 5 x 4 x 3 x 2 x 1

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2. Write a Java program to calculate the average value of array elements. (5 marks)

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3. Write a Java method called Search that takes an array of integers and an integer value n, then it tests

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if the array contains the value n it will return true, otherwise it returns false. (**5 marks**)

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4. Write a Java program to that has a method to find the maximum value of an array of double values. The method header is as follows:

```
public static double max(double[] a) (5 marks)
```

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