Course Title: Programming 1 **Date:** 16 / 04 / 2019 **No. of Questions:** 7Questions **Time:** 1 hour **Using Calculator (No)**	**University of Palestine** 2nd Midterm Exam 2nd semester 2018/2019 **Total Grade:** 15	**Instructor Name:** Eng. Eman Alajrami **Student No.:** _____ **Student Name:** _____ **College Name:** IT **Dep. / Specialist:** _____ **Using Dictionary (No)**

First Question	No. of Branches (3)	(10 marks)

1. **Identify and correct the errors in the following programs: (5 marks)**

```
int i = 1;
while ( i <= 10 );
  i++;
}
```

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```
for ( i = 100, i >= 1, i++ )
  System.out.println( i );
```

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```
int sum( int x, int y )
{
  int result;
  result = x + y;
}
```

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```
void f( float a );
{
  float a;
  System.out.println( a );
}
```

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```
public class Test {
  public static method1(int n, m) {
    n += m;
    method2(3.4);
  }
  public static int method2(int n) {
    if (n > 0) return 1;
    else if (n == 0) return 0;
    else if (n < 0) return –1;
  }
}
```

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

```
public class Test {
  public static void main(String[] args) {
    int i = 1;
    while (i <= 4) {
      int num = 1;
      for (int j = 1; j <= i; j++) {
        System.out.print(num + "bb");
        num *= 3;
      }

      System.out.println();
      i++;
    }
  }
}
```

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```
public class Test {
   public static void main(String[] args) {
      int max = 0;
      max(1, 2, max);
      System.out.println(max);
   }
   public static void max( int value1, int value2, int max) {
      if (value1 > value2)
         max = value1;
      else
         max = value2;
   }
}
```

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3. Choose the correct answer: (3 marks)

1. What balance after the following code is executed?

```
int balance = 10;

while (balance >= 1) {
  if (balance < 9)
continue;
  balance = balance - 9;
}
```

a. 1 b. 0 c. 1 d. 2 e. The loop does not end

2. **Assume x=1 and y=2, what is x, after evaluating (x > 0) || (x-- > 0)?**

a. 1b. 2 c. 3d. 4e. None of the choices

3. **What is item after the following loop terminates?**

```
int sum = 0;
int item = 0;
do {
  item += 1;
  sum += item;
  if (sum > 4) break;
}
while (item < 5);
```

a. 2 b. 3c. 4d.5 e. None of the choices.

Second Question No. Of Branches (3) 5 Marks

1. **Write a method called `Rect_Area` that takes the height and width of a rectangle to calculate the area of the rectangle and returns the area.(1.5 marks)**

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2. Write a method `isEven` that uses the remainder operator (`%`) to determine whether an integer is even. The method should take an integer argument and return `true` if the integer is even and `false` otherwise. **(1.5 marks)**

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3. Write a complete Java program that has a loop computes **(2 marks)**

$$\frac{1}{2}+\frac{2}{3}+\frac{3}{4}+\ldots+\frac{98}{99}+\frac{99}{100}$$

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BONUS (1 mark)

An integer number is said to be a perfect number if its factors, including 1 (but not the number itself), sum to the number. For example, 6 is a perfect number, because 6 = 1 + 2 + 3. Write a method **perfect** that determines whether parameter number is a perfect number. Use this method in an application that determines and displays all the perfect numbers between 1 and 1000. **(Hint: use loops)**

انتظار النّجاح بدون العمل الشاق لتحقيقه، يعادل انتظار الحصاد بدون بذر البذور

GOOD LUCK