Question - 1

SCORE: **10 points**

Identify whether the following statements are True or False:
I. Comparable interface uses compare method for object comparisons.
II. Comparator interface uses compareTo method for object comparisons.

- ○ I. True II. True
- ● I. False II.False
- ○ I. True II.False
- ○ I. False II.True

Question - 2

SCORE: **10 points**

Which of the following is true about factory method?

- ○ A factory method is a non-constructor operation that creates and returns class instances

- ○ Factory methods are widely used in mid-level design patterns and in object-oriented programming in general

- ○ Factory methods create new instances using constructors or cloning, so they do not rely on any special technique for class instantiation

- ● All of the above.

Question - 3

SCORE: **10 points**

What is the output of this program?

```java
import java.util.*;

public class Demo {

    public static void main(String []args) {
        ArrayList<Integer> result = new
ArrayList<>();
        int[] nums = {2, 8, 3, 6, 1, 10, 5, 7, 4,
3};
        int[] copy = nums;
```

```
        for (int i = 0; i < nums.length; i++) {
            // check if nums[i] is odd number
            if (nums[i] % 2 == 1) {
                nums[i]++;
                result.add(copy[i]);
                continue;
            }
        }
        // print every element within the
  arraylist
        for (int i: result) {
            System.out.print(i + " ");
        }
    }
}
```

○ 3

○ 4

○ 3 1 5 7 3

◉ 4 2 6 8 4

Question - 4

SCORE: **30 points**

Reverse String

Reverse a String

Example:

input: bc

ouput: cb

Question - 5

SCORE: **10 points**

Say that there are three classes: *Computer*, *AppleComputer*,
and *IBMComputer*. What are the likely relationships between these
classes?

◉

Computer is the superclass, AppleComputer and IBMComputer are
subclasses of Computer.

○

Computer, AppleComputer and IBMComputer are sibling classes.

○

IBMComputer is the superclass, AppleComputer and Computer are
subclasses of IBMComputer.

○

Computer is a superclass, AppleComputer is a subclasses of Computer,
and IBMComputer is a sublclas of AppleComputer.

Question - 6

SCORE: **10 points**

Which of the following is incorrect?

Which of the following is incorrect?

X: `super` keyword and `this` keyword can not be used in a `static` method.
Y: `static` variables are shared by all objects and initialized when the `class` is first loaded.

○ Only X

○ Only Y

● Both are correct

○ Both are incorrect

Question - 7

What numbers does the following code print to the console?

```java
int[] nums = {1, 2, 3, 4, 5, 6, 7, 8, 9};
for (int i = 0; i < 8; i++) {
    System.out.print(nums[i]+1);
}
```

○ 01234567

○ 12345678

● 23456789

○ 345678910

Question - 8

What is the output by executing following section of code:

```java
String str1 = new String("Happy ");
String str2 = new String("Sad ");

str1 = str2;
if (!str1.equals(str2))
  system.out.println("Same Value!");
else
  system.out.println("Different value!");
```

○ "Same Value!"

● "Different value!"

○ "Same Value!" "Different value!"

○ None