QUIZ III

Name

1) What will be the output of the following program? (10 Pts. - Objective 5)

```java
import java.util.ArrayList;
import java.util.List;
public class Question1 {
    public static void main(String[] args) {
        List<Integer> list = new ArrayList<>();
        list.add(1);
        list.add(2);
        list.add(3);
        list.add(4);
        list.add(3);
        list.remove(3);
        System.out.println(list);
    }
}
```

A. [1, 2, 4]

B. [1, 2, 4, 3]

C. [1, 2, 3, 3]

D. [1, 2, 3, 4]

2) What will be the output of the following program? (10 Pts. - Objective 5)

```java
import java.util.HashSet;
import java.util.Set;
public class Question2 {
    int value;
    public static void main(String[] args) {
        Set<Question2> set = new HashSet<>();
        set.add(new Question2(5));
        set.add(new Question2(4));
        set.add(new Question2(3));
        set.add(new Question2(4));
        set.add(new Question2(2));
        System.out.println(set.size());
    }
    public Question2(int value){
        this.value = value;
    }
    public boolean equals(Object o){
        if (o instanceof Question2){
            return value == ((Question2)o).value;
        }
        return false;
    }
}
```

A. 2

B. 3

C. 4

D. 5

3) What will be the output of the following program? (10 Pts. - Objective 5)

```java
import java.util.ArrayList;
import java.util.List;
public class Question3 {
    public static void main(String[] args) {
        List<Integer> list = new ArrayList<>();
        list.add(5);
        list.add(7);
        list.add(10);
        list.add(4);
        for (int i = 0; i < list.size(); i++) {
            list.remove(i);
        }
        System.out.println(list);
    }
}
```

A. []

B. [7, 4]

C. [7, 10, 4]

D. [5, 7, 10, 4]

4) What will be the output of the following program? (10 Pts. - Objective 5)

```java
import java.util.LinkedHashSet;
import java.util.Set;
public class Question4 implements Comparable<Question4>{
    String value;

    public static void main(String[] args) {
        Set<Question4> set = new LinkedHashSet<>();
        set.add(new Question4("abc"));
        set.add(new Question4("a"));
        set.add(new Question4("ab"));
        set.add(new Question4("bc"));
        set.add(new Question4("ab"));
        System.out.println(set);
    }

    public Question4(String value){
        this.value = value;
    }
    public int compareTo(Question4 q) {
        return q.value.length() - value.length();
    }
    public String toString(){
        return value;
    }
}
```

A. [abc, a, ab, bc, ab]

B. [abc, a, ab, bc]

C. [abc, a, ab]

D. [a, ab abc]

2

5) What will be the output of the following program? (10 Pts. - Objective 5)

```java
import java.util.Comparator;
import java.util.Map;
import java.util.TreeMap;
public class Question5 implements Comparator<String> {
    public int compare(String q1, String q2) {
        return q1.length() - q2.length();
    }

    public static void main(String[] args) {
        Map<String, Integer> map = new TreeMap<>(new Question5());
        map.put("abc", 1);
        map.put("a", 3);
        map.put("ab", 1);
        map.put("bc", 2);
        map.put("ab", 3);
        System.out.println(map);
    }
}
```

A. { abc=1, a=3, ab=1}

B. {a=3, ab=1, abc=1}

C. {a=3, ab=3, abc=1}

D. {a=3, ab=3, abc=1, bc=2}

6) What will be the output of the following program? (10 Pts. - Objective 7)

```java
public class Question6 extends Exception{
    public static void main(String[] args) {
        try {
            badMethod();
            System.out.print("A");
        } catch (RuntimeException ex) {
            System.out.print("B");
        } catch (Exception ex1) {
            System.out.print("C");
        } finally {
            System.out.print("D");
        }
        System.out.print("E");

    }
    public static void badMethod() throws Question6{
        throw new Question6();
    }
}
```

A. BD

B. CDE

C. BDE

D. BCDE

7) What will be the output of the following program? (10 Pts. - Objective 7)

```java
public class Question7 {
    public static void main(String[] args) {
        try {
            String a = null;
            System.out.println(a.length());
        } catch (Exception e) {
            System.out.println("Exception");
        } catch (RuntimeException re) {
            System.out.println(" Runtime Exception");
        }
        System.out.println("finished");
    }
}
```

A. finished

B. Exception

C. Compilation fails.

D. Runtime Exception

8) What will be the output of the following program? (10 Pts. - Objective 7)

```java
public class Question8 {
    public static void main(String [] args) {
        try {
            badMethod();
            System.out.print("A");
        }catch (Error ex){
            System.out.print("B");
        }finally{
            System.out.print("C");
        }
        System.out.print("D");
    }
    public static void badMethod(){
        throw new RuntimeException();
    }
}
```

A. BCD

B. C is printed before exiting with an error message.

C. Compilation fails.

D. BC is printed before exiting with an error message.

9) What will be the output of the following program? (10 Pts. - Objective 7)

```java
public class Question9 {
   public static void main(String[] args) {
      try {
         method1();
      } finally {
         System.out.print("Z");
      }
   }

   private static void method1() {
      System.out.print("A");
      try {
         method2();
      } catch (NullPointerException ex) {
         System.out.print("U");
         if (1 == 1)
            return;
         System.out.print("V");
      } catch (Exception ex) {
         System.out.println("E");
      } finally {
         System.out.print("X");
      }
      System.out.print("Y");
   }

   private static void method2() {
      try {
         System.out.print("B");
         String a = null;
         a.length();
      } catch (Exception ex) {
         throw ex;
      } finally {
         System.out.print("C");

      }
   }
}
```

A. ABCEXZ

B. ABCUXZ

C. ABCEXYZ

D. ABCUXYZ

10) What will be the output of the following program? (10 Pts. - Objective 7)

```java
public class Question10 {
    public static void main(String[] args) {
        try {
            method(0);
            System.out.print("C");
        } catch(Exception ex) {
            System.out.print("D");
        } finally {
            System.out.print("E");
        }
    }

    private static void method(int a) {
        if (a == 0) {
            throw new IllegalArgumentException();
        }
        try {
            System.out.println("A");
        } finally {
            System.out.println("B");
        }

    }

}
```

A. BE

B. ABDE

C. BDE

D. DE