Seneca College

of Applied Arts & Technology

SCHOOL OF COMPUTER STUDIES

Sample JAC444 Midterm Test 1 - 2016

A. Theory (10 marks = 5 marks + 5 marks)

1. When can one implement a deep cloning in Java?

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2. What are the differences between `super` and `super()` ?

B. Code – Quiz 40 marks = 5 quizzes * 8 marks (3 mark for correct answer and 5 for explanation)

1. What will happen when you attempt to compile and run this code?

```
abstract class A {
    abstract public void method1();
    public void method2() {
       System.out.println("The second method");
    }
}
public class B extends A {
    public static void main(String argv[]){
      A e = new B();
      e. method2();
    }
    public void method1(){
       System.out.println("The first method");
    }
    public void method2(){
        method1 ();
    }
}
```

1) The code will compile and run, printing out the words "The first method"
2) The compiler will complain that the A class is an abstract class.
3) The code will compile and run, printing out the words "The second method "
4) The compiler will complain about the statement `A e = new B();`

ANSWER: _____

Explanation:_____

2. Given the following code, what will happen when you try to compile and run it?

```
public class Q2 {
      public static void main(String[] args) {
            boolean b1 = false; int val = 1;
            if ((b1 == true) && ((val += 1) == 2))
                System.out.println("Good: " + val);
             else
                System.out.println("Bad: " + val);
   }
}
```

A. Compilation error, attempting to perform binary comparison on logical data type.
B. Compilation and output of "Good: 1".
C. Compilation and output of "Bad: 2".
D. Compilation and output of "Bad: 1".

ANSWER:_____
Explanation:_____

3. Given the following code, what will be the output?

```
class Int {
    public int i = 1;
}
public class Q3 {
    public static void main(String argv[])  {
      Q3 t = new Q3();
         t.first();
    }
    public void first() {
        int i = 2;
        Int v = new Int();
        v.i = 3;
        second(v, i);
```

```
            System.out.println(v.i);
        }
        public void second(Int v, int i)  {
            i = 0;
            v.i = 4;
            Int val = new Int();
            v =  val;
            System.out.println(v.i + " " + i);
        }
    }
```

A 1 1
4

B 1 0
1

C 4 0
4

D 1 0
4

ANSWER: _____

Explanation: _____

_____

_____

4. Given the following code, what will be the output?

```
public class Q4 {
      public static void main(String args[]) {
            System.out.println('e' - 'b' + "A" + 4);
      }
}
```

A. 3A4
B. 'e' - 'b' + "A" + 4
C. Compilation error
D. None of these

ANSWER: _____

Explanation:_____

_____

What will happen when you try to compile and run the following code?

```
public class Q5 {

      public static void test() {
            for (int i = 0; i < 3; i++)
                  System.out.print(i);
            System.out.print(i);
      }

      public static void main(String[] args) {
            test();
      }
}
```

A 0122
B 0123
C Compilation error
D None of these

ANSWER:_____

Explanation:_____

_____

_____

C. What does the following code print? Please explain your answer.

20 marks = 5 marks + 15 marks

```
class X {
      public void m1() {
            System.out.print("X m1() - ");
      }

      public void m2() {
            System.out.print("X m2() - ");
      }
}

public class Y extends X {
```

```
        public void m1() {
              System.out.print("Y m1() - ");
              super.m2();
        }

        public static void main(String args[]) {
              X x = new Y();
              x.m1();
        }
    }
```

Output:

_____

_____

Explanation:_____

_____

_____

_____

_____

```
class Dog {
      public void bark() {
            System.out.println("Dog - bark - ");
      }
}

class MyDog extends Dog {
      public void bark() {
            String s1 = new String("woofer");
            String s2 = new String("woofer");
            if (s1 == s2)
                System.out.println("Same ");
            if (s1.equals(s2))
                System.out.println("Equals ");

            System.out.println("woofer - bark -  ");
      }
}

public class Bark {
```

```
        public static void main(String args[]) {
              Dog woofer = new Dog();
              Dog nipper = new MyDog();
              woofer.bark();
              nipper.bark();
        }
    }
```

Output:

Explanation:

D. Code – Development (Question 1 = 10 marks Question 2 = 20marks)

1. Consider the following Java expression

```
x -> { return (x > 0  &&  x < 10); }
```

If this is a valid expression in Java, explain what it does and how would you use it.

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2. Write a Java program that takes two arguments on a command line. The first argument is the name of the text file, and the second is a string. Your program must read the file and print all the lines from the file where the given string is found.

   Write another Java program that takes many arguments on a command line. All arguments are the text file names, except the last, which is a string. Find how many lines in a file contain the given string. Every file must be read in a different thread.

   Use in the second program as much code as you can from first program. Please properly document your code.