

Class Test 05: CSI 203 - Object Oriented Programming, Spring 2019

Total Marks: 20, Time: 30 minutes

Name: _____

ID: _____

1. What would be the output of the program below if user enters '4' and '0' as 2 inputs?

[8]

```
import java.util.Scanner;
public class CT4 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("Please enter 2 numbers");
        try {
            int a = scan.nextInt();
            int b = scan.nextInt();
            int c = divide(a, b);
            System.out.println("Result:" + c);
        } catch (Exception e) {
            System.out.println("Catch of main method.");
        }
    }

    private static int divide(int a, int b) {
        try {
            int c = a/b;
            return c;
        } catch (NumberFormatException e) {
            System.out.println("Can't divide by 0");
        } finally {
            System.out.println("finally of divide method.");
        }
    }

    return 0;
}
```

Write your output here:

2. Observe the code and output below carefully. The program is serializing an object of **Doctor** class, then de-serializing and printing the name, gender and age of the doctor. Why do you think the age displayed as '0' even though we passed '30' during serialization?

[4]

```
1 package ct4;
2
3 import java.io.*;
4 public class TestSerialization {
5
6     public static void main(String[] args) throws IOException, ClassNotFoundException {
7         String file="doctor.txt";
8         Doctor doc1 = new Doctor("Arif Hasan", "Male", 30);
9         // Serialization
10        ObjectOutputStream oos = new ObjectOutputStream(new FileOutputStream(file));
11        oos.writeObject(doc1);
12        oos.close();
13
14        // De-serialization
15        ObjectInputStream ois = new ObjectInputStream(new FileInputStream(file));
16        Doctor doc2 = (Doctor)ois.readObject();
17        System.out.println(doc2.name + "\t" + doc2.gender + "\t" + doc2.age);
18    }
19 }
```

Output:

```
<terminated> TestSerialization [Java Application] C
Arif Hasan      Male      0
```

ANS:

3. Write a simple java code to read from a file and print the content of odd lines in console. So in console you need to print the 1st, 3rd, 5th, 7th ... lines of file. [8]

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            System.out.println("Result:" + c);
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    }

    private static int divide(int a, int b) {
        try {
            int c = a/b;
            return c;
        } catch (Exception e) {
            System.out.println("Can't divide by 0");
        } finally {
            System.out.println("finally of divide method.");
        }
        return 0;
    }
}
```

Write your output here:

2. Observe the code below carefully, it is serializing an object of **Patient** class. The **Patient** class has implemented Serializable interface, but still the program is throwing NotSerializableException. What could cause the exception? Why the object is not serializable?

[4]

```
1 package ct4;
2
3 import java.io.*;
4 public class TestSerialization {
5
6     public static void main(String[] args) throws IOException {
7         Patient p = new Patient("Patient1", "Male", 30, new Doctor("Arif Hasan"));
8         ObjectOutputStream oos = new ObjectOutputStream(new FileOutputStream("patient.txt"));
9         oos.writeObject(p);
10        oos.close();
11    }
12 }
```

Output:

```
<terminated> TestSerialization [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (Jul 17, 2019, 3:54:34 PM)
Exception in thread "main" java.io.NotSerializableException: ct4.Patient
    at java.io.ObjectOutputStream.writeObject0(Unknown Source)
    at java.io.ObjectOutputStream.writeObject(Unknown Source)
    at ct4.TestSerialization.main(TestSerialization.java:9)
```

ANS:

3. Write a simple java code to read from a file and find out how many lines are there in the file. Also print the line number in console. [8]