Final Exam F2022 Version B

Please **DO NOT START** the exam until instructed, out of fairness to all students. 90 minutes.

Score: _____ / 66 pts

Name: _____

1. Complete the code below that performs the following functionality: (10 points)

    Write code that takes an array of integers and returns a *string* of all the even integers in the array, concatenated together.

    For example, if the input is `{7, 2, 3, 1, 4, 6, 3, 4}` your code would return the string "`2464`"

```
public _____ convertArr(_____ inputArray){

        String result = ""; //this creates an empty string




















        return _____ ;
}
```

2. Complete the code below that performs the following functionality: (17 points)

Write code that checks if a two dimensional list of integers has a row that starts and ends with the same number; if it does, return the index of the last row where this happens. If it never happens, return -1.

For example, if the input is
```
{{1, 3, 4, 2, 1},
 {2, 3},
 {3, 3, 3, 3, 1},
 {4, 1, 2, 4},
 {5, 3, 2}}
```

Your code would return the integer 3, corresponding to the second to last row.

public _____ check(_____ inputArray){

        return _____ ;
}

3. Complete the code below that performs the following functionality: (13 points)

   Write code that find the index of the last word in an `ArrayList` of `String`s that matches the string CAT. For example, if the contents of the `ArrayList` looked like:

   DOG
   CAT
   BIRD
   HOUSE
   CAT
   MOUSE

   your code would return 4. If the string is not in the `ArrayList`, your code should return -1.

   You must correctly use generics in your answer in all applicable places for full credit, as well as compile.

```
import_____;

public _____ firstAB(_____ words){
```



```
        return _____ ;
}
```

4. Which of the following is true about the constructors for a class called **Person**?
    a. You can call the default constructor **Person()** without having written one.
    b. You can write multiple constructors for the **Person** class.
    c. A constructor can be called without the **new** keyword, or with it, for **Person**.
    d. A and B
    e. B and C
    f. A, B, and C

5. A private method can only access private attributes/fields in the same class.
    a. True
    b. False

6. A private method can only access other private methods in the same class.
    a. True
    b. False

7. A static method can only access static attributes/fields in the same class.
    a. True
    b. False

8. A static method can only access other static methods in the same class.
    a. True
    b. False

9. A public method can only access other public attributes/fields and methods in the same class.
    a. True
    b. False

10. What gets stored in **num1** after the assignment **int num1 = (int) 1.3;**
    a. 0 (an integer)
    b. 0.0 (a floating point)
    c. 1 (an integer)
    d. 1.0 (a floating point)
    e. 1.3

scratch paper

11. What is the output of the following code? (19 points)

```java
public class Exam5{
        private static int count = 4;
        private int[] ages = new int[3];
        private boolean found = true;

        public Exam5(int count, boolean foundIn){
                ages[1] = count;
                count++;
                found = foundIn;
                this.count++;
        }

        public int[] func1(int num1){
                this.ages[num1] = 7;
                num1++;
                return ages;
        }

        public static void main(String[] args){
                int num1 = 5;
                Exam5 exam1 = new Exam5(num1, false);          WRITE YOUR OUPTPUT HERE
                System.out.println(exam1.found);          _____
                System.out.println(exam1.count);          _____
                System.out.println(exam1.ages[0]);          _____
                System.out.println(exam1.ages[1]);          _____

                num1 = 0;
                Exam5 exam2 = new Exam5(num1, false);
                System.out.println(exam2.found);          _____
                System.out.println(exam2.count);          _____
                System.out.println(exam2.ages[0]);          _____
                System.out.println(exam2.ages[1]);          _____

                System.out.println(exam1.found);          _____
                System.out.println(exam1.count);          _____

                exam1.ages[0] = 9;
                exam1.ages[1] = 10;
                System.out.println(exam1.ages[0]);          _____
                System.out.println(exam1.ages[1]);          _____
                System.out.println(exam2.ages[0]);          _____
                System.out.println(exam2.ages[1]);          _____

                int[] array = exam1.func1(num1);
                System.out.println(num1);          _____
                System.out.println(exam1.ages[0]);          _____
                System.out.println(exam1.ages[1]);          _____
                array[1] = 3;
                System.out.println(exam1.ages[0]);          _____
                System.out.println(exam1.ages[1]);          _____
        }
}
```

8

Extra credit (2 points):

Name one thing that didn't work for you this semester, that we should change for next semester (you can say NONE and still get full extra credit here):

Name one thing that worked for you this semester, that we should keep doing next semester (you can say NONE and still get full extra credit here):