Final Exam S2022

Please **DO NOT START** the exam until instructed, out of fairness to all students. 75 minutes.

Score: _____ / 71 pts

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

Write code that converts the input of an array of characters into a String. It should return that String. Fill out the method below.

For example, if the input is {'h', 'e', 'l', 'l', 'o'} your code would return “hello”

public __________________________ convertArr(___________________________ inputArray)
{
    String result = ""; //this creates an empty string

    return __________________________; 
}


2. Complete the code below that performs the following functionality: (15 points)

Write code that checks if an input array of integers contains the numbers 123 in order, and returns true or false. Fill out the method below.

For example, if the input is \{2, 1, 2, 3, 5\} your code would return true, and if the input is \{2, 1, 2, 4, 3, 5\} your code would return false.

```java
public __________________________ checkABC(________________________ inputArray){

    return __________________________;
}
```
3. Complete the code below that performs the following functionality: (20 points)

Write code that find the index of the first word in an ArrayList of Strings that contains the substring AB. You must use generics correctly in all places in your answer. You may use any built-in methods of the String class (such as String substring(int start, int end) or char charAt(int index)). Your code should return -1 if it doesn’t find AB in any of the words.

For example, if the input is an ArrayList that contains (in this order):
world
Dog
Cat
birdABbird
snake
mouseABCD

your code would return 3, because that is the index of birdABbird in the ArrayList.

Hint: this problem is conceptually the same as our grid problems (quiz4) – pretend you have a 2D grid of characters at first if that helps with coming up with a solution (we will also give up to 16/20 points partial credit if you prefer to implement that solution instead of an ArrayList of Strings).

```java
import java.util.ArrayList;

public int firstAB(ArrayList<String> words) {
    return 0;
}
```
Multiple choice (7 points) – circle the best answer

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
public class Exam5{
    private static int count = 3;
    private int[] ages = new int[2];
    private boolean found = true;

    public Exam5(int count, boolean foundIn){
        ages[0] = count;
        count++;
        found = foundIn;
        this.count++;
    }

    public int[] func1(int num1){
        this.ages[num1] = 11;
        num1++;
        return ages;
    }

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

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

        Exam5 exam1 = new Exam5(num1, false);
        System.out.println(exam1.ages[0]);
        System.out.println(exam1.ages[1]);
        System.out.println(new Exam5(nu...
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):