CS211 Fall 2012

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Exam 2

Name:

_____

QUESTION 1

1. Give the output for the following code (there are 3 classes for question 1). The question can be tricky – make sure you read the code carefully! (28 points):

```
public class MyException extends NullPointerException{
     private String message;
     public String severity;

     public MyException(String m){
          System.out.println("in MyEx ctor");
          message = m;
          severity = "medium";
     }

     public String toString(int i){
          System.out.println("in MyEx print");
          return severity +" "+ message;
     }
}
```

NOTE: the `NullPointerException` class overrides the `toString()` method from the `Object` class, and when it is called, returns the `String` **"java.lang.ArithmeticException: / by zero"**

```
public class Kinga extends MyException{
     public String name;

     public Kinga(String n){
          super("kinga");
          System.out.println("in Kinga ctor");
          severity = "hard";
          name = n;
     }

     public String toString(){
          System.out.println("in Kinga print");
          return "Kinga " + super.toString(3) +" "+ name;
     }
}
```

```
public class Driver2{
     public static void main(String[] args){
          Exception excep = null;
          int[] denom = {0,-1,1,3};
          for (int i = 0; i < denom.length; i++){
               try{
                    doDivide(5,denom[i]);
                    System.out.println("great success");
               }catch(Kinga e){
                    System.out.println("Kinga :-(");
                    excep = e;
               }catch(MyException e){
                    excep = e;
                    System.out.println("MyEx  :-(");
               }catch(Exception e){
                    excep = e;
                    System.out.println("other :-(");
               }
               System.out.println(excep.toString());
          }
     }

     public static void doDivide(int x, int y){
          if (y == 1)

               throw new MyException("pointless" +

                    "division!");

          else if (y == -1)
               throw new Kinga("also a waste");
          else
               System.out.println("Div: " + (x/y));
     }
}
```

(provide output on next page)

QUESTION 2: Multiple choice. **Circle the correct answer and justify it in the space provided.** (18 points)

1) What is wrong with the following class declaration?

```
public class Exam extends Questionnaire, Test implements
Comparable
```

A) You cannot have a public class
B) You cannot extends a class and implement an interface
c) You cannot extend two classes at the same time

2) Assume class A has the following attribute declarations:

```
private static String name;
public static int course;
private String model;
public String age;
```

a) Lower in the file in class A has the following method:

```
public void foo(){
      System.out.println(name);
}
```

What is wrong with the method above?
A) A public method cannot access a private attribute
B) A non-static method cannot access a static attribute
C) A and B
D) Nothing is wrong

b) Lower in the file in class A has the following method:

```
public static void bar(){
      System.out.println(model);
}
```

What is wrong with the method above?
A) A public method cannot access a private attribute
B) A static method cannot access a non-static attribute
C) A and B
D) Nothing is wrong

3) If I have a statement in a method in a class other than Exam2, what has to be true about the following line:

```
System.out.println(Exam2.foo);
```

A) An Exam2 object must exist in scope
B) foo must be public
C) foo must be static
D) B and C
E) A,B, and C

4) If I have a statement in a method in a class other than Exam2, what has to be true about the following line:

```
System.out.println(Exam2.func());
```

A) An Exam2 object must exist in scope
B) func must be public
C) func must be static
D) B and C
E) A,B, and C

5) If I have the following statements in a method in a class other than Exam2, what has to be true about the following lines:

```
Exam2 ex = new Exam2();
System.out.println(ex.foo);
```

A) The Exam2 class doesn't have any constructors other than the default constructor
B) foo must be static
C) A and B
D) None of the above

6) If I have the following statements in a method in a class other than Exam2, what has to be true about the following lines:

```
Exam2 ex = new Exam2();
```

A) The Exam2 class cannot be abstract
B) The Exam2 class cannot have any child classes
C) A and B
D) None of the above

7) If I have an interface that has one method, foo, declared inside of it, and a class called Exam2 implements that interface, which of the following must be true under all circumstances:

A) The Exam2 class cannot be abstract
B) The Exam2 class must provide a body for the foo method
C) None of the above

8) If I have the following statement in my main method, what must be true:

```
Scanner scan = new Scanner(new File(args[0].substring(0,3));
```

A) It is possible for an unchecked exception to occur on the line
B) It is possible for a checked exception to occur on the line
C) It must be inside a try-catch block because of (B)

QUESTION 3: Regular expressions (10 points)

1. Given the following regular expressions, circle YES or NO, whether the provided `String`s would match the regular expression. You may assume that the regular expression is called with a method in Java that checks to see if the test string matches in entirety, as opposed to in part (for example, if the regular expression is "cat", the `String` "cat" would match, but not "this is a cat in a sentence".

   Regular expression: ".*abc+(d|e)*e?[1-9]\\d"

   a. abc11 YES NO

   b. aabcce11 YES NO

   c. aabccde11 YES NO

   d. aabceddee11 YES NO

   e. qbcddde20 YES NO

   f. abc00 YES NO

   g. abce23 YES NO

   h. abcde34 YES NO

   i. .abc12 YES NO

   j. \abcce10 YES NO

Extra credit: Name one thing you like about this course and one thing you don't like about the course.