

APPM 2710 Midterm Exam

March 09, 2001

100 pts

You will have 50 minutes to complete the exam. Put your name in the upper right hand corner of this exam. Write your answers on the blank paper provided. When you are done please staple this exam to the front of your answer sheet(s). Please read through all the questions carefully, there are many subtleties to Java that may be lurking in the questions. Code samples include line numbers to the left for your convenience they are not part of the code. Remember to distribute your effort and time to the points available accordingly. Partial credit counts!

1. (20 pts) Answer the following:

(a) In a Java source file what order must the following elements appear:

```
class package import
```

(b) Order the following data types from smallest to largest bit size:

```
double char int byte short
```

(c) True or False, a signed data type has an equal number of non-zero positive and negative values available?

(d) Of the following, which are the appropriate modifiers for a **main()** method declaration?

```
private protected public abstract static boolean  
void synchronized final Object native transient
```

(e) Of the following, list all the acceptable variable names in Java:

```
my_stuff2 _yourStuff $money %path$ 2yourhealth
```

2. (15 pts) Given the following code snippet, write what its output looks like (assume it compiles and runs correctly):

```
1   int a=3, b=27;  
2   switch(a++){  
3       case 1:  
4       case 3:  
5           System.out.println(a +"," + --b);  
6       case 4:  
7           System.out.println(++a +"," + --b);  
8           break;  
9       case 10:  
10          System.out.println(a +"," +b);  
11          break;  
12      default:  
13          System.out.println("No changes");  
14  }  
15  System.out.println(a +"," +b);
```

3. (15 pts) Convert the following code to an equivalent while loop:

```
1   for(int i=0; i<toplev; i++){  
2       if(i==6) break;  
3       SomeClass tmp = mySCArray[i];  
4       tmp.printInfo();  
5   }
```

There is more on the back!

4. (20 pts) There are three errors in the following code that will prevent compilation. What are they and how do you fix them?

```
1 byte b = 256;
2 int i = 256;
3 String s = new String("hello");
4 short st = i;
5 char c = (int) i;
6 System.out.println(b+", "+c+", "+st+", "+i+", "+s);
```

5. (30 pts) Write a class meeting the following specifications:

- (a) has the name 'Cell'
- (b) is part of a package called 'com.game'
- (c) utilizes an external class called 'java.awt.Point'
- (d) is accessible only to those classes in the same package.
- (e) has a data member of type 'Point' which is accessible to all users.
- (f) has a data member of type 'int' which is accessible to no-one.
- (g) has a default constructor accessible to all users, which initializes the two data members.
- (h) has a parameterized constructor accessible to all users, which takes arguments for each of the data members and sets each data member to these arguments.
- (i) has a method to return the value of the inaccessible data member.
- (j) has a method to set the inaccessible data member to the users choice.