

Computer Science 120 Exam

Please answer the questions on separate sheets of paper. Remember to put your name at the top of each sheet and the question number by each answer. By signing your name to the top of each sheet, you are asserting that you neither received nor gave help on that or any other problem on the exam. Note that there may be questions on both sides of this paper.

Name: _____ Date: _____

1. Give the code for the method Subtract2Ints which will subtract one integer y from another integer x and return the result. You should prompt the user for the numbers and read them in. Make sure you declare all variables needed and add proper comments. (10 pts)
2. Give the truth table for the following statement: (5 pts)

$x \vee \neg y$

3. Write JAVA code using switch statements for the code below. (8 pts)

```
String comment;
int number = readInt("enter the month you want");
if (number < 3 && number >11)
    comment = "Winter";
else if (number >2 && number < 6)
    comment = "Spring";
else if (number >5 && number < 9)
    comment = "Summer"
else
    comment = "Fall";
System.out.println(comment);
```

4. You have three tools: if, for, and while. Pick and state the proper tool to use for each situation, and write a code snippet to demonstrate how you would do it: (16 pts)
 - (a) You need to display 'Hello World' 12 times.
 - (b) You need to check to see if the input was a number greater than 75.
 - (c) You need to print out the numbers 21-40.
 - (d) You want to see if the input equals "stop".
5. Give the code for the method isOdd. Assume that you will be passing in the number to be tested as a parameter and return a boolean indicating whether or not the number was even. (8 pts)
6. Give the code to declare a String for the string "This is a test", and then print out the characters in reverse order. Do NOT use StringBuilder to do this.(15 pts)

7. Write a description of what this JAVA code does. (6 pts)

```
int counter = 10;
for (int i=1; i<counter; i++){
    int result = 1;
    for(int j = 1; j<=i; j++){
        result *=j;
    }
    System.out.println(result);
}
```

8. Who was Augusta Ada Byron, Lady Lovelace and why was she important? (6 pts)
9. Identify the errors in the following code snippet and explain how to fix them:(8 pts)

```
1    for(int x = 0, x!< 6, x++){
2        System.out.println("Hello)
3    }
```

10. Rewrite this code to use variables in the println line: (10 pts)

```
// This program will find the area of a circle with radius 5.
```

```
public class MyProgram {

    public static void main( String args[]) {

        System.out.println("a = " + (3.14*5*5));

    }

}
```

11. Name one primitive type which has not been used in this exam and describe what type of data it can hold. (2 pts).
12. Assume that the following code snippet is inside a class and method and is intended to prompt the user with a math question, read in the user's answer, then print out the actual answer. Find the errors in this code. (6 pts)

```
1:  int num1 = 14;
2:  int num2 = 6;
3:  int answer
4:  for(int i=0; i!<10; i++){
5:      System.out.print(num1 + " / " + num2 + "=");
6:      answer = input.nextInt();
7:      System.out.print(answer);
8:  }
```