**Name**

**Advanced Programming in Java**

**Lab Exercise 9/11/2023**

Reference: Lesson 9 in Blue Pelican Java

Use the following code for problems 1 – 10 and give the value of *true\_false* for each:

int i = 10, j = 3;

boolean true\_false;

1. true\_false = (j >i);

2. true\_false = (i> j);

3. true\_false = (i= = j);

4. true\_false = ( (j <= i) | | (j >= i ) );

5. true\_false = ( (i> j) && (j = = 0) );

6. true\_false = ( (j < 50) | | (j != 33) );

7. true\_false = ( !(j >= 0) | | (i<= 50) );

8. true\_false = ( !(! (!true)) );

9. true\_false = (5 < = 5);

10. true\_false = (j != i);

11. Write a statement that will store a true in *boolean b* if the value in the variable *m* is 44 or less.

12. Write a statement that will store a false in *boolean b* if the value in *r* is greater than 17

13. What is returned by the following expression? (Recall that the precedence order of

logical operators is !, &&, and finally | |.)

!( (2>3) | | (5= =5) && (7>1) && (4<15) | | (35<=36) && (89!=34) )

In problem 14 – 16 what is the output?

14. String s1 = “school BUS”;

if ( s1.equals(“school bus”) )

System.out.println(“Equal”);

else

System.out.println(“Not equal”);

15. String s1 = “school BUS”;

if ( s1.equalsIgnoreCase(“school bus”) )

System.out.println(“Equal”);

else

System.out.println(“Not equal”);

16. int j = 19, m = 200;

if (j= =18)

m++;

j++;

System.out.println(m);

System.out.println(j);

17. Write a statement that will store a *false* in *boolean b* if the value in *g* is not equal to 34.

18. Write a statement that will store a *true* in *boolean b* if integer *k* is even, *false* if it is odd.

19. Write a program that inputs a *String* from the keyboard after the prompt, “Enter your

password”. If it’s entered exactly as “XRay”, printout “Password entered successfully.”;

otherwise, have it printout “Incorrect password.”

(attach source code to this handout)

20. What is output by the following “nested *if*s” code? Note: I reformatted this….

int k = 79;

if (k>50)

{

if (k<60)

{

System.out.println(“One”);

}

else

{

System.out.println(“Two”);

}

}

else

{

if (k>30)

System.out.println(“Three”);

else

System.out.println(“Four”);

}

## Exercise 1 --- Ground Beef Value Calculator

Different packages of ground beef have different percentages of fat and different costs per pound. Write a program that asks the user for:

1. The price per pound of package "A"
2. The percent lean in package "A"
3. The price per pound of package "B"
4. The percent lean in package "B"

The program then calculates the cost per pound of lean (non-fat) beef for each package and writes out which is the best value.

Price per pound package A:

2.89

Percent lean package A:

85

Price per pound package B:

3.49

Percent lean package B:

93

Package A cost per pound of lean:3.4

Package B cost per pound of lean:3.752688

Package A is the best value

Assume that the two packages will not come out equal in value.

## Exercise 2 --- Fibonacci Word

Write a program FibonacciWord.java that prints the Fibonacci word of order 0 through 10. f(0) = "a", f(1) = "b", f(2) = "ba", f(3) = "bab", f(4) = "babba", and in general f(n) = f(n-1) followed by f(n-2). Use string concatenation.

**Submit this document with answers as well as your source code.**