

## Logical Expressions --- Post-Lab:

1. There are three primary logical operators that we use to combine logic values into logical expressions.

True  False

2. The logical AND operation is true only if both of its operands are true; otherwise, the operation is false.

True  False

3. The logical OR operator is true if at least one of its operands is true; otherwise, the operation is false.

True  False

4. The logical NOT operator is true if its operand is false, and the operation false if its operand is true.

True  False

5. Among the logical operators `||` has higher precedence than `&&`.

True  False

6. The NOT operator has the same high precedence as the other unary operators.

- a. True
- b. False

7. When evaluating a logical operation, Java always evaluates the right operand before it evaluates its left operand.

True  False

8. The `==` operator when applied to reference variables tests whether the variable refer to the same memory location.

True  False

9. What is the output of the following code segment?

```
int i = 5;
int j = 7;
int k = 6;

if( ( i < j ) || ( k < 5 ) ) {
    System.out.println( "Yes" );
} else {
    System.out.println( "No" );
}

if( ( i < j ) && ( k < 5 ) ) {
    System.out.println( "Yes" );
} else {
    System.out.println( "No" );
}
```

10. Consider the following code fragment whose output is based on the values of Boolean variables a, b, c, and d.

```
if( a && b ) {
    if ( !c && !d ) {
        System.out.println( 1 );
    } else if ( !d ) {
        System.out.println( 2 );
    } else {
        System.out.println( 3 );
    }
} else if ( c == d ) {
    System.out.println( 4 );
} else if ( c ) {
    System.out.println( 5 );
} else {
    System.out.println( 6 );
}
```

- a. With a = true, b = true; c = false; and d = false the segment outputs what value?
- b. With a = true, b = true; c = false; d= true the segment outputs what value?
- c. With a = true, b= false; c = true; and d = false the segment outputs what value?
11. Write a code segment that sets integer k to 3 if the integer m is less than 5 and j is less than 0; otherwise, k should be changed to 1 if m is not less than k.
12. Relational operators have greater precedence than the logical operators.  
[ ] True [ ] False