CSE110: Principles of Programming

Assignment 3

Name:

ID:

Program:

Multiple Choice and True/False

1. The `if` statement is an example of a _____.
   a. sequence structure
   b. decision structure
   c. pathway structure
   d. class structure
2. This type of expression has a value of either `true` or `false`.
   a. `binary` expression
   b. `decision` expression
   c. `unconditional` expression
   d. `boolean` expression
3. The _____ operator reverses the truth of a `boolean` expression.
   a. NOT
   b. AND
   c. OR
   d. XOR
4. `&&`, `||`, and `!` are _____.
   a. relational operators
   b. logical operators
   c. conditional operators
   d. ternary operators

5. Which of the following is the correct order of precedence of logical operators?
   a. NOT < AND < OR
   b. OR < NOT < AND
   c. NOT < OR < AND
   d. AND < OR < NOT
6. The process of comparing two strings character by character is known as _____.
   a. lexicographical comparison
   b. logical comparison
   c. relational comparison
   d. case-sensitive string comparison
7. This is a `boolean` variable that signals when some condition exists in the program.
   a. flag
   b. signal
   c. sentinel
   d. siren
8. How does the character 'A' compare to the character 'B'?
   a. 'A' is greater than 'B'
   b. 'A' is less than 'B'
   c. 'A' is equal to 'B'
   d. You cannot compare characters
9. This is an `if` statement that appears inside another `if` statement.
   a. nested `if` statement
   b. tiered `if` statement
   c. dislodged `if` statement
   d. structured `if` statement
10. An `else` clause always goes with _____.
    a. the closest previous `if` clause that doesn't already have its own `else` clause
    b. the closest `if` clause
    c. the `if` clause that is randomly selected by the compiler
    d. none of these
11. When determining whether a number is inside a range, it's best to use this operator.
    a. `&&`
    b. `!`
    c. `||`
    d. `? :`
12. This determines whether two different `String` objects contain the same string.
    a. the == operator
    b. the = operator
    c. the `equals` method
    d. the `stringCompare` method

13. This conditional operator takes three operands.
    a. ternary operator
    b. unary operator
    c. conditional operator
    d. relational operator

14. This section of a `switch` statement is branched to if none of the `case` expressions match the `switch` expression.
    a. `else`
    b. `default`
    c. `case`
    d. `otherwise`
15. In most editors, you are indenting by one level each time that you press this key:
    a. Tab
    b. Shift
    c. Alt
    d. Space
16. **True or False:** The `default` statement does not require a `break` statement.
17. **True or False:** A conditionally executed statement should be indented one level from the `if` clause.
18. **True or False:** All lines in a conditionally executed block should be indented one level.
19. **True or False:** When an `if` statement is nested in the `if` clause of another statement, the only time the inner `if` statement is executed is when the `boolean` expression of the outer `if` statement is `true`.
20. **True or False:** When an `if` statement is nested in the `else` clause of another statement, the only time the inner `if` statement is executed is when the `boolean` expression of the outer `if` statement is `true`.
21. **True or False:** The scope of a variable is limited to the block in which it is defined.

Find the Error

Find the errors in the following code:

1.
```
// Warning! This code contains ERRORS!
if (x = 1)
   System.out.println(x);
else if( x == 2);
{
   x++;
   System.out.println(x);
}
```

2.
```
// Warning! This code contains an ERROR!
if(age > 18)
   System.out.println("Person can vote");
else (age < 18)
   System.out.println("Person can't vote");
```

3.
```
// Warning! This code contains ERRORS!
if (num2 == 0)
   System.out.println("Division by zero is not possible.");
   System.out.println("Please run the program again ");
   System.out.println("and enter a number besides zero.");
else
   Quotient = num1 / num2;
   System.out.print("The quotient of " + Num1);
   System.out.print(" divided by " + Num2 + " is ");
   System.out.println(Quotient);
```

4.
```
// Warning! This code contains ERRORS!
switch (score)
{
   case (score > 90):
      grade = 'A';
      break;
   case(score > 80):
      grade = 'b';
      break;
   case(score > 70):
      grade = 'C';
      break;
   case (score > 60):
      grade = 'D';
      break;
   default:
      grade = 'F';
}
```

5. The following `if` statement should determine whether the value of variable `x` lies between 1 and 20. What is wrong with it?

```
if ((x > = 1) &&(x < 20))
```

6. The following statement should determine whether `count` is within the range of 0 through 100. What is wrong with it?

```
if (count >= 0 || count <= 100)
```

7. The following statement should determine whether `count` is outside the range of 0 through 100. What is wrong with it?

```
if (count < 0 && count > 100)
```