CSCI 193 Software Design and Programming I
Learning Outcomes Assessment

Using a scantron, complete the following:

1. An object is a programming element that contains data and the procedures that operate on the data.
   a. TRUE
   b. FALSE
2. Which of the following does not contain valid C++ datatypes?
   a. char, double, int, float
   b. long int, char, true, iostream
   c. int, bool, double, char
   d. int, bool, double, cout
   e. None of the above

Use the following to evaluate the following relational expression:
Assume the variables x = 5, y = 6, and z = 8

3. x == 5 || y > 3
   a. True
   b. False
4. (2 + x) != y
   a. True
   b. False
5. If you want a user to enter exactly 20 values, which loop would be the best to use?
   a. do-while
   b. infinite loop
   c. for loop
   d. while loop
   e. None of these
6. Which of the following is a valid C++ identifier?
   a. _employee_number
   b. myExtraLongvariableName
   c. Jne1977
   d. __department
   e. All of the above
7. What is wrong with the following for loop?
   ```cpp
   for (int i = 0; i < 10; i--)
   {
        cout << "Hello\n";
   }
   ```
   a. infinite loop
   b. off-by-one-counter
   c. cannot use a for-loop for this
   d. i is not initialized

8. Suppose the input is 6. What is the value of a after the following C++ code executes?

```cpp
cin >> a;
if (a > 0)
      switch
      {
            case 1:
                  a = a + 3;
            case 3:
                  a++;
                  break;
            case 6:
                  a = a +6;
            case 8:
                  a = a * 8;
                  break;
            default:
                  a--;
      }
else
      a = a + 2;
```

   a. 12
   b. 20
   c. 96
   d. 6
   e. None of the above

9. How many times will the following loop execute? What is the output of each case?

```cpp
x = 5; y = 50;
do
      x = x + 10;
while (x < y);
cout << x << "   " << y << endl;
```

   a. Number of iterations: 1, Output: 15 50
   b. Number of iterations: 0, Output: 5 50
   c. Number of iterations: 5, Output: 55 50
   d. Number of iterations: 2, Output: 25 50
   e. None of the above

Use the following lines of code to answer questions 10 - 13

```
1       #include <iostream>
2
3       using namespace std;
4
5       double larger (double x, double y);
6
7       int main()
8       {
9               double num;          //variable to hold the current number
10              double max;          //variable to hold the larger number
11              int count;           //loop control variable
12
13              cout << "Enter 10 numbers." << endl;
14              cin >> num;                                        //step 1
15              max = num;                                         //step 1
16
17              for (count = 1; count < 10; count++)       //step 2
18              {
19                      cin >> num;                                //step 2a
20                      max = larger(max, num);                    //step 2b
21              }
22
21              cout << "The largest number is " << max << endl;
24              return 0;
25      }//end of main function
26      double larger(double x, double y)
27      {
28              if (x >= y)
29                      return x;
30              else
31                      return y;
32      }
```

10. All of the following line numbers contain comments except:
    a. 26
    b. 14
    c. 25
    d. 10
    e. None of the above
11. What line of code contains the function prototype?
    a. 26
    b. 20
    c. 17
    d. 5
    e. None of the above
12. What is the data type of the value the function returns?
    a. int
    b. char
    c. double
    d. void
    e. None of the above

13. What line is the preprocessor directive located?
    a. 1
    b. 4
    c. 17
    d. 24
    e. None of the above
14. What line reads in a value?
    a. 3
    b. 14
    c. 17
    d. 21
    e. 29
    f. None of the above