CS 161 Exam I Winter 2018 **FORM 1**

Please put your name and form number on the scantron.

True (A)/False (B) (28 pts, 2 pts each)

1. A variable that can hold a whole number is called an integer. **T**

2. Errors in a program can be classified into three types: logic, syntax, and operator. **F**

3. The following will successfully compile: cout << "Good luck on the exam; **F**

4. The compiler will catch all programming mistakes. **F**

5. The body of a do while loop is never guaranteed to execute. **F**

6. The integer 0 is considered true. **F**

7. Conditionals are used when we need our program to make a choice between two or more things. **T**

8. Variable names may begin with a number. **F**

9. if-else statements that are inside other if-else statements are said to be concatenated. **F**

10. A break statement in a switch stops the program. **F**

11. The code following the default case is executed if none of the other cases are matched in a switch statement. **T**

12. The types of parameters are optional in the function declaration. **F**

13. It is possible to have a function with no parameters. **T**

14. Functions may have multiple return statements. **T**

Multiple Choice (72 pts, 3 pts each)

15. What punctuation indicates the end of a C++ statement?
    - a. **A semicolon (;)**
    - b. A period (.)
    - c. A colon (:)
    - d. A question mark (?)

16. int number;
    - a. is an output statement
    - b. is an input statement
    - c. **is a variable declaration**
    - d. is a program

17. Given the following code fragment and the input value of 2.0, what output is generated?

```
float tax;

float total;

cout << "enter the cost of the item\n";

cin >> total;


if (total >= 3.0)

{

        tax = 0.10;

        cout << total + (total * tax) << endl;

}

else

{

        cout << total << endl;

}
```

   a. 2.2
   b. 2.0
   c. 3.1
   d. 4.4

18. Which of the following best describes an operator?
   a. An operator is a rule that must be followed when constructing a program.
   b. An operator allows you to perform operations on one or more pieces of data.
   c. An operator marks the beginning or ending of a statement or is used to separate items in a list.
   d. An operator is a word that has a special meaning.

19. Which step uncovers any syntax errors in your program?
   a. Editing
   b. Compiling
   c. Linking
   d. Executing

20. What is the correct conditional statement to determine if x is between 19 and 99?
   a. (x < 19 && x > 99)
   b. (x < 19 || x > 99)
   c. (x > 19 && x < 99)
   d. (x > 19 || x < 99)

21. Which of the following is not a valid identifier?
    a. myInt
    b. myInteger
    c. return
    d. my_integer

22. What is the value of x after the following statements?

        int x;

        x = x + 30;

    a. 0
    b. 30
    c. 33
    d. Garbage

23. Which of the following statements is NOT legal?
    a. char ch = 'b';
    b. char ch = '0';
    c. char ch = 65;
    d. char ch = "cc";

24. What is the value of x after the following statements?
        float x;
        x = 3/2;
    a. 1.5
    b. 3.0
    c. 1.0
    d. 6.0

25. Given the following code fragment, which of the following expressions is always true?
        int x;

        cin >> x;

    a. if (x < 3)
    b. if (x == 1)
    c. if ((x / 3) > 1)
    d. if (x = 1)

26. Which of the following is not a good reason for choosing a certain loop control?
    a. What the loop does
    b. The minimum number of iterations of the loop
    c. The condition for ending the loop
    d. If the loop is in a function

27. The _____ describes how the function will work.
    a. function declaration
    b. function header
    c. function body
    d. function call

28. Given the following code, what is the final value of i?

```
int i;

for(i=0; i<=4;i++)

{

        cout << i << endl;

}
```

    a. 3
    b. 4
    c. 5
    d. 0

29. If you need to write a do-while loop that will ask the user to enter a number between 2 and 5 inclusive, and will keep asking until the user enters a correct number, what is the loop condition?
    a. (2<=num<=5)
    b. (2<5<number)
    c. (2 <= number && number <= 5)
    d. (2 < number || number > 5)

30. What is wrong with the following for loop?

```
for (int i=0; i < 10; i--) {

        cout << "Hello\n";

}
```

    a. can not use a for-loop for this
    b. i is not initialized
    c. infinite loop
    d. off-by-one error

31. What is the value returned by the following function?

```
int function()

{

    int value = 35;

    return value + 5;

    value += 10;

}
```

    a. 35
    b. 40
    c. 50
    d. 10

32. Multiple arguments to a function are separated by
   a. comments
   b. semicolons
   c. colons
   d. commas

33. If you need to write a function that will compute the cost of some candy, where each piece costs 25 cents, which would be an appropriate function declaration?
   a. int calculateCost(char name);
   b. char calculateCost(int count);
   c. int calculateCost int count;
   d. int calculateCost(int count);

34. If you have the following variable declaration in your program,
   const int SIZE=34;

   then which of the following statements are legal?

   a. SIZE ++;
   b. x = SIZE--;
   c. cout << SIZE;
   d. cin >> SIZE;

35. When a variable is assigned a number that is too large for its data type, it
   a. Underflows
   b. Overflows
   c. Reverses
   d. Converts

36. Which statement is equivalent to the following?

   number += 1;

   a. number = number – 1;
   b. number = number + 1;
   c. number = 1;
   d. number =+ 1;

37. Which of the following statements will read an entire line of input into the string object, address?
   a. cin << address;
   b. cin address;
   c. cin.get (address);
   d. getline (cin, address);

38. To use the rand() function, you must include the _____ header file?
   a. cstdlib
   b. cstring
   c. iostream
   d. cmath