

# 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.
2. Errors in a program can be classified into three types: logic, syntax, and operator.
3. The following will successfully compile: `cout << "Good luck on the exam;`
4. The compiler will catch all programming mistakes.
5. The body of a do while loop is never guaranteed to execute.
6. The integer 0 is considered true.
7. Conditionals are used when we need our program to make a choice between two or more things.
8. Variable names may begin with a number.
9. if-else statements that are inside other if-else statements are said to be concatenated.
10. A break statement in a switch stops the program.
11. The code following the default case is executed if none of the other cases are matched in a switch statement.
12. The types of parameters are optional in the function declaration.
13. It is possible to have a function with no parameters.
14. Functions may have multiple return statements.

## **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.  $(2 \leq \text{num} \leq 5)$
- b.  $(2 < 5 < \text{number})$
- c.  $(2 \leq \text{number} \ \&\& \ \text{number} \leq 5)$
- d.  $(2 < \text{number} \ || \ \text{number} > 5)$

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
- comments
  - semicolons
  - colons
  - 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?
- `int calculateCost(char name);`
  - `char calculateCost(int count);`
  - `int calculateCost int count;`
  - `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?
- `SIZE ++;`
  - `x = SIZE--;`
  - `cout << SIZE;`
  - `cin >> SIZE;`
35. When a variable is assigned a number that is too large for its data type, it
- Underflows
  - Overflows
  - Reverses
  - Converts
36. Which statement is equivalent to the following?
- `number += 1;`
- `number = number - 1;`
  - `number = number + 1;`
  - `number = 1;`
  - `number =+ 1;`
37. Which of the following statements will read an entire line of input into the string object, address?
- `cin << address;`
  - `cin address;`
  - `cin.get (address);`
  - `getline (cin, address);`
38. To use the `rand()` function, you must include the \_\_\_\_\_ header file?
- `cstdlib`
  - `cstring`
  - `iostream`
  - `cmath`