

LOUISIANA TECH UNIVERSITY
Mechanical Engineering Program

MEEN 292
Mechanical Engineering Computer Applications

Practice Exam I

TRUE/FALSE

1. ___ Comments cause the computer to print the text after the `//` on the screen when the program is run.
2. ___ The escape sequence `\n` when output with `cout` causes the cursor to position to the beginning of the next line on the screen.
3. ___ All variables must be declared before they are used.
4. ___ All variables must be given a type when they are declared.
5. ___ C++ considers the variable `number` and `NUMBER` to be identical.
6. ___ Declarations can appear almost anywhere in the body of a C++ program.
7. ___ The arithmetic operators `*`, `/`, `%`, `+`, and `-` all have the same level of precedence.

Label each of the following C++ variables as being either correct (C) or incorrect (I). If the variable is incorrect, state why.

8. ___ `_under_bar_`
9. ___ `m928134`
10. ___ `t5`
11. ___ `j7`
12. ___ `herSales`
13. ___ `hisAccountTotal`
14. ___ `67h2`
15. ___ `top-Dog`
16. ___ `Great!`
17. ___ `float`

What, if anything, prints when each of the following C++ statements is performed? If nothing prints, then answer "nothing." Assume `x = 2` and `y = 3`.

18. ___ `cout << x;`
19. ___ `cout << x + x;`
20. ___ `cout << "x=";`
21. ___ `cout << "x = " << x;`
22. ___ `cout << x + y << " = " << y + x;`
23. ___ `z = x + y;`
24. ___ `cin >> x >> y;`
25. ___ `// cout << "x + y = " << x + y;`
26. ___ `cout << "\n";`

Given the equation $y = ax^3 + 7$, label each of the following C++ statements as being either a correct (C) or incorrect (I) representation of this equation.

27. _____ `y = a * x * x * x + 7;`
28. _____ `y = a * x * x * (x + 7);`
29. _____ `y = (a * x) * x * (x + 7);`
30. _____ `y = (a * x) * x * x + 7;`
31. _____ `y = a * (x * x * x) + 7;`
32. _____ `y = a * x * (x * x + 7);`

List the three types of control structures from which all programs can be constructed.

33. _____
34. _____
35. _____

List the four forms of the `if` statement.

36. _____
37. _____
38. _____
39. _____

40. What is the difference between a pre-test and a post-test repetition structure?

Determine the values of each variable after the calculation is performed. Assume that when each statement begins executing all variables have the integer value 5.

41. `product *= x++;`
42. `quotient /= ++x;`

Identify and correct the errors in each of the following:

43.

```
While (c <= 5) {  
    Product *= c;  
    ++c;  
}
```
44. `cin << value;`
45.

```
if (gender == 1)  
    cout << "Woman" << endl;  
else;  
    cout << "Man" << endl;
```
46.

```
while (z >= 0)  
    sum += z;
```

Fill in the blanks in each statement below.

47. A variable that is known only within the function in which it is defined is called a _____.
48. The _____ statement in a called function is used to pass the value of an expression back to the calling function.
49. The keyword _____ is used in a function header to indicate that a function does not return a value or to indicate that a function contains no parameters.

50. A variable declared outside any function is called a _____ variable.
51. Lists and tables of values are stored in _____.
52. The elements of an array are related by the fact that they have the same _____ and _____.
53. The number used to refer to a particular element of an array is called its _____.
54. An array subscript should normally be of type _____.
55. C++ normally passes function arguments by _____.
56. The first element in a normal C++ array has the subscript value of _____.
57. The fourth element of array `values` would be accessed using the expression _____.