

# C++ Operators, Intrinsic Functions, and Strings - Test

## Part 1: Multiple Choice Questions (MCQ)

(Each question has one correct answer)

1. **What is the result of the expression  $5 + 3 * 2$  in C++?**
  - a) 16
  - b) 11
  - c) 13
  - d) 10
2. **Which of the following operators has the highest precedence?**
  - a) + (Addition)
  - b) \* (Multiplication)
  - c) = (Assignment)
  - d) && (Logical AND)
3. **What does the statement  $x *= y + 2;$  mean?**
  - a)  $x = x * y + 2;$
  - b)  $x = x * (y + 2);$
  - c)  $x = x + y * 2;$
  - d)  $x = (x * y) + 2;$
4. **What will be the value of  $y$  after the following code executes?**

```
int x = 5;  
int y = x++;
```

- a) 5
  - b) 6
  - c) 7
  - d) Compilation error
5. **Which operator is used to determine the size (in bytes) of a variable or data type in C++?**
    - a) `size()`
    - b) `sizeof()`
    - c) `length()`
    - d) `bytes()`
  6. **What will be the output of the following code?**

```
int a = 10 / 3;  
cout << a;
```

- a) 3.333
  - b) 3
  - c) 4
  - d) Compilation error
7. **Which of the following is a correct example of type casting?**
    - a) `double x = 5 / 2;`
    - b) `double x = (double)5 / 2;`

- c) `double x = double(5 / 2);`  
d) `double x = 5 // 2;`
8. **What does `pow(2,3)` return?**  
a) 8  
b) 6  
c) 9  
d) 5
9. **Which library must be included to use mathematical functions like `sqrt()`, `pow()`, and `log()`?**  
a) `<math.h>`  
b) `<cmath>`  
c) `<stdlib.h>`  
d) `<iostream>`
10. **What is the result of `cout << (5 > 3) << endl;`?**  
a) true  
b) false  
c) 1  
d) 0
- 

## Part 2: True/False Questions

(Mark each statement as True or False)

11. The `++` operator can be used as both a prefix (`++x`) and a suffix (`x++`).
12. The modulus operator `%` can be used with floating-point numbers.
13. The `sizeof()` operator returns the size of an object in bits.
14. The expression `cout << 10 / 4;` outputs 2.5.
15. Intrinsic functions are built-in functions that may be optimized by the compiler.
- 

## Part 3: Short Answer Questions

(Answer briefly in 1-2 sentences)

16. What is the difference between `a++` and `++a` in C++?
17. What will be the output of the following C++ program?

```
int a = 10, b = 20;  
cout << (a > b ? a : b);
```

18. How do you declare a string variable in C++? Provide an example.
19. What will be the output of this C++ statement?

```
string s = "Hello";  
cout << s.length();
```

20. Why is it necessary to include the `<cmath>` library when using functions like `sin()`, `cos()`, and `pow()`?