

Test for Lecture 4: C++ Data Types, Identifiers, Variables, and Constants

Part 1: Multiple Choice Questions (MCQ)

- 1. Which of the following is NOT a fundamental data type in C++?**
 - a) int
 - b) float
 - c) string
 - d) double
- 2. What is the size of a char in most C++ compilers?**
 - a) 1 byte
 - b) 2 bytes
 - c) 4 bytes
 - d) 8 bytes
- 3. Which keyword is used to define a constant variable in C++?**
 - a) static
 - b) const
 - c) final
 - d) define
- 4. Which of the following is NOT a valid C++ identifier?**
 - a) speed_of_light
 - b) 2ndVariable
 - c) _temperature
 - d) Velocity123
- 5. What is the difference between signed and unsigned integers?**
 - a) Signed integers can store negative values, while unsigned integers cannot.
 - b) Unsigned integers are always negative.
 - c) Both are identical in behavior.
 - d) Signed integers use more memory than unsigned integers.
- 6. Which of the following data types has the highest precision?**
 - a) float
 - b) double
 - c) long double
 - d) int
- 7. Which statement correctly declares and initializes an integer variable x to 10?**
 - a) int x = 10;
 - b) x = 10;
 - c) variable x = 10;
 - d) integer x = 10;
- 8. What will be the output of the following program?**

```
int x = 5;
int y = x + 2;
cout << y;
```

 - a) 2
 - b) 5

- c) 7
- d) 10

9. Which data type should be used to store a large integer value?

- a) char
- b) short
- c) long
- d) bool

10. What is a boolean variable in C++?

- a) A variable that can hold any numeric value
- b) A variable that holds only `true` or `false`
- c) A variable that stores text
- d) A type of floating-point number

Part 2: True/False Questions

- 11. C++ is case-sensitive, so `MyVar` and `myvar` are different variables.
- 12. The `const` keyword allows variables to be modified later in the program.
- 13. The `double` data type is used for storing whole numbers.
- 14. All variables must be declared before they are used in C++.
- 15. The boolean values `true` and `false` are internally represented as 1 and 0, respectively.

Part 3: Short Answer Questions

- 16. Explain the difference between `float`, `double`, and `long double` in C++.
- 17. What will be the output of the following program?

```
bool flag = true;
cout << flag;
```

- 18. How can you define a symbolic constant in C++? Provide an example.
- 19. What is the purpose of `sizeof()` operator in C++? Give an example.
- 20. What are the three types of integer literals in C++?