Chapter 2: Introduction to C++ Programming; Input/Output and Operators

Section 2.2 First Program in C++: Printing a Line of Text

2.2 Q1: End-of-line comments that should be ignored by the compiler are denoted using:
a. Two forward slashes (`//`).
b. Three forward slashes (`///`).
c. A slash and a star (`/*`).
d. A slash and two stars (`/**`).
ANS: a. Two forward slashes (`//`).

2.2 Q2: Which of the following does *not* cause a syntax error to be reported by the C++ compiler?
a. Mismatched `{}`.
b. Missing `*/` in a comment.
c. Missing `;` at the end of a statement.
d. Extra blank lines.
ANS: d. Extra blank lines.

2.2 Q3: Which of the following is *not* a syntax error?
a.
```
std::cout << 'Hello world! ';
```
b.
```
std::cout << "Hello
                        world! ";
```
c.
```
std::cout << "Hello world! ";
```
d.
```
std::cout << Hello world!;
```
ANS: c. `std::cout << "Hello world! ";`

2.2 Q4: The escape sequence for a newline is:
a. `\n`
b. `\t`
c. `\r`
d. `\a`
ANS: a. `\n`

2.2 Q5: Which of the following statements would display the phrase `C++ is fun`?
a.
```
std::cout << "Thisis fun\rC++ ";
```
b.
```
std::cout << '++ is fun';
```
c.
```
std::cout << "\"C++ is fun\"";
```
d.
```
std::cout << C++ is fun;
```
ANS: a. `std::cout << "Thisis fun\rC++ ";`

Section 2.3 Modifying Our First C++ Program

2.3 Q1: Which of the following is *not* a valid C++ identifier?
a. `my Value`
b. `_AAA1`
c. `width`
d. `m_x`
ANS: a. `my Value` **(Identifiers may not contain blanks)**

2.3 Q2: Which is the output of the following statements?

```
std::cout << "Hello ";
std::cout << "World";
```

a. `Hello World`

b.
```
World Hello
```
c.
```
Hello
World
```
d.
```
World
Hello
```
ANS: a.
```
Hello World
```

2.3 Q3: Which of the following is the escape character?
a. `*`
b. `\`
c. `\n`
d. `“`
ANS: b. \

2.3 Q4: Which of the following code segments prints a single line containing `hello there` with the words separated by a single space?
a.
```
std::cout << "hello ";
std::cout << " there";
```
b.
```
std::cout << "hello" ,  " there";
```
c.
```
std::cout << "hello";
std::cout << "there";
```
d.
```
std::cout << "hello";
std::cout << " there";
```
ANS: d.
```
std::cout << "hello";
std::cout << " there";
```

Section 2.4 Another C++ Program: Adding Integers

2.4 Q1: Which of the following is a variable declaration statement?
a.
```
int total;
```
b.
```
#include <iostream>
```
c.
```
int main()
```
d.
```
// first string entered by user
```
ANS: a.
```
int total;
```

2.4 Q2: The _____ object enables a program to read data from the user.
a. `std::cout`.
b. `std::cin`.
c. `std::cread`.
d. `std::cget`.
ANS:b. **`std::cin`.**

2.4 Q3: The assignment operator _____ assigns the value of the expression on its right to the variable on its left.
a. `<-`
b. `->`
c. `=`
d. `#`
ANS: c. =.

2.4 Q4: The `std::endl` stream manipulator_____.
a. inputs a newline.
b. flushes the output buffer.
c. outputs a newline and flushes the output buffer.
d. terminates the program.
ANS: c. outputs a newline and flushes the output buffer.

Section 2.5 Memory Concepts

2.5 Q1: Which of the following statements does *not* overwrite a preexisting value stored in a memory location?

a. `int a;`
b. `number = 12;`
c. `y = y + 2;`
d. `width = length;`

ANS: a. `int a;`

2.5 Q2: Which of the following statements could potentially change the value of `number2`?

a. `std::cin >> number2;`
b. `sum = number1 + number2;`
c. `number1 = number2;`
d. `std::cout << number2;`

ANS: a. `std::cin >> number2;`

Section 2.6 Arithmetic

2.6 Q1: What is the value of `result` after the following C++ statements execute?

```
int a, b, c, d, result;
a = 4;
b = 12;       c = 37;
d = 51;
result = d % a * c + a % b + a;
```

a. 119
b. 51
c. 127
d. 59

ANS: a. 119.

2.6 Q2: In what order would the following operators be evaluated

`-, *, /, +, %`

Assume that if two operations have the same precedence, the one listed first will be evaluated first.

a. `+, -, /, *, %`
b. `-, +, %, *, /`
c. `-, *, %, +, /`
d. `*, /, %, -, +`

ANS: d. `*, /, %, -, +`

2.6 Q3: Which of the following is *not* an arithmetic operator?

a. `+`
b. `-`
c. `=`
d. `%`

ANS: c. =

Section 2.7 Decision Making: Equality and Relational Operators

2.7 Q1: What will be the output after the following C++ statements have been executed?

```
int a, b, c, d;
a = 4;
b = 12;
c = 37;
d = 51;

if ( a < b )
   cout << "a < b" << endl;

if ( a > b )
   cout << "a > b" << endl;

if ( d <= c )
   cout << "d <= c" << endl;

if ( c != d )
   cout << "c != d" << endl;
```

a.
```
a < b
c != d
```
b.
```
a < b
d <= c
c != d
```
c.
```
a > b
c != d
```
d.
```
a < b
c < d
a != b
```
ANS: a.
```
a < b
c != d
```

2.7 Q2: Which of the following *is* a compilation error?
a. Neglecting to declare a local variable in a function before it is used.
b. Using a triple equals sign instead of a double equals sign in the condition of an `if` statement.
c. Omitting the left and right parentheses for the condition of an `if` statement.
d. All of the above.
ANS: d. All of the above.

2.7 Q3: Each of the following is a relational or equality operator *except*:
a. `<=`
b. `=!`
c. `==`
d. `>`
ANS: b. `=!`