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.

2.4 Q5: Which of the following uses C++11's list initialization to initialize count to 0?
a. `int count = 0;`
b. `int count[0];`
c. `int count(0);`
d. `int count{0};`
ANS: d. `int count{0};`

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{4};
int b{12};
int c{37};
int d{51};
int 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{4};
int b{12};
int c{37};
int 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. =!