Programming 1 Assignment 1

Q1) True or False:

1. Assemblers are programs that translate a program written in assembly language into machine language. ( )

2. Compilers are programs that translate a program written in a high-level language into machine code, called object code. ( )

3. An algorithm is a step-by-step problem-solving process in which a solution is arrived at in a finite amount of time. ( )

4. If a = 4; and b = 3;, then after the statement a = b; the value of b is still 3. ( )

5. Suppose x = 5. After the statement y = x++; executes, y is 5 and x is 6. ( )

6. Suppose a = 5. After the statement ++a; executes, the value of a is still 5 because the value of the expression is not saved in another variable. ( )

Q2) Suppose x, y, z, and w are int variables. What is stored in x, y, z, and w after the following statements execute?

```
x = 9;
y = x - 4;
z = (y + 7) % 6;
w = (x * z) / y-3;
z = w + (x-y+2) % x;
```

Answer:

X= __9___ , y = __5___ , z = __- 3__ , w = __3___

Q3) Which of the following are correct C++ statements?

a) cout << "Programming with C++!" << endl;

b) cout << " Programming " << " with " <<

<< " C++" << endl;

c) cout << " Programming "

<< " with C++!" ;

d) cout << "Programming with C++!' << endl;

Q4) **Suppose x and y are int variables and ch is a char variable. Assume the following input data:**

13 28 D

14 E 98

A B 56

What value (if any) is assigned to x, y, and ch after each of the following statements executes? (Use the same input for each statement.)

A. **cin >> x >> y;** **cin.ignore(50, '\n');** **cin >> ch;**	**B.** **cin >> x;** **cin.ignore(50, '\n');** **cin >> y;** **cin.ignore(50, '\n');** **cin.get(ch);**
C. **cin >> y;** **cin.ignore(50, '\n');** **cin >> x >> ch;**	**D.** **cin.get(ch);** **cin.ignore(50, '\n');** **cin >> x;** **cin.ignore(50, 'E');** **cin >> y;**

Answer :

Subtask	X	Y	Ch
A	**13** **14**	**28** **not allowed in integer datatype**	**D** **9**

	not allowed in integer datatype	not allowed in integer datatype	5
B	13 14 not allowed in integer datatype	28 not allowed in integer datatype not allowed in integer datatype	D 9 5
C	28 not allowed in integer datatype not allowed in integer datatype	13 14 not allowed in integer datatype	D 9 5
D	28 not allowed in integer datatype not allowed in integer datatype	not allowed in integer datatype 98 56	1 1 A

Q5) Consider the following program segment:

```
//include statement(s)
#include <iostream>
#include <cstring>
using namespace std;
int main()
{
//variable declaration
string name;
double studyHours;
cout << "please enter name: ";
cin >> name;
cout << "please enter studyHours: ";
```

```
cin >> studyHours;
//executable statements
cout << "Hello, " << name << "! on Saturday, you need to study " << studyHours << " hours for the exam.";
//return statement
return 0;
}
```

Rewrite the complete program by doing all these steps:

a) Write C++ statements that include the header files iostream and string.

b) Write C++ statements that declare the following variables: name of type string and studyHours of type double.

c) Write C++ statements that prompt and input a **string into name** and a **double value into studyHours**.

d) Write a C++ statement that outputs the values of name and studyHours with the **appropriate text**. For example, if the value of name is "Donald" and the value of studyHours is 4.5, the output is:

Hello, Donald! on Saturday, you need to study 4.5 hours for the exam.

e) Compile and run your program.