**CSC 1100 – Problem Solving and Programming**

**Homework 5 – [your name]**

**25 points – Due April 1, 11am**

**Late deadline is April 3, 11:59pm, but 20% off**

**a)** Save this document with your name and the homework number somewhere in the file name.

**b)** Type/paste your answers into the document.

**c)** Submit this document to the Canvas item where you downloaded this document.

**1) [2 points]**

**a)** Where in a C++ app may a call to a void function appear?

Appear wherever a statement may appear

**b)** Where in a C++ app may a call to a value function appear?

Appear wherever an expression may appear

**2) [2 points]** What is the purpose of a function prototype?

Allows user to declare function after the main function by declaring the first line of the function sometime before it is called.

**3) [2 points]** What is the disadvantage of using global variables?

Any part of the app can change its value

**4) [2 points]** Modify the following value function to keep the latest value of variable **level** between calls to the function.

double applyCoat(double coatFactor)

{

double level = 6;

level = level \* coatFactor;

::level = level;

return level;

}

**5) [4 points]**

**a)** How is a function stub useful?

Allows programmer to plan functions without having to fully program and debug them

**b)** Write a function stub for value function **applyCoat** from a previous question.

Double applyCoat(double coatFactor) {

Cout << “running applyCoat here…’ << endl;

**6) [2 points]** What is the function signature of value function **applyCoat** from a previous question.

Double applyCoat(double coatFactor)

**7) [5 points]** Write an overloaded value function called **colorMix** that takes either two integer parameters or three integer parameters and averages them. The two-color version returns string:

Two-color mix: 124.9

string colorMix(int color1, int color2) {

double avg;

avg = (color1 + color2) / 2;

return to\_string(avg);

}

The three-color version returns string:

Three-color mix: 217.4

string colorMix(int color1, int color2, int color3) {

int avg;

avg = (color1 + color2 + color3) / 3;

return to\_string(avg);

}

**8) [2 points]** Write the first line of a void function that has four parameters with two of the parameters having default values. Invent your own function and parameter names. Use the camel naming convention for the names.

Void helloWorld(string name, int age, string message = “hello world”, int pets = “0”)

**9) [4 points]** Declare an enumerated type that limits values to five types of trees. Also include an unknown/unassigned value. For the values, use all upper case letters and use an underscore (\_) to represent a space in any tree name. Declare a variable of that type and initialize it with a value.

**a)** Enumerated type declaration

enum treeNames {BIRCH, OAK, SPRUCE, ACACIA, DARK\_OAK};

**b)** Variable declaration with initialization

treeNames tree = SPRUCE;