The University of Alabama in Huntsville
Electrical & Computer Engineering
CPE 197 01
Spring 2001
Test I
February 1, 2001

1) (12 points) Put a check mark beside the variables that are syntactically correct.

_____ `time_out`	_____ `ask?`	_____ `schmerdlap`
_____ `PointsScored`	_____ `2timing`	_____ `float`

2) (3 points) What is the purpose of a variable declaration statement?

4) (12 points) Evaluate the following expressions given the following variable declarations:

```
double x  = 23.5, y = 7.2;
int m = 2, n = 5;
```

`int(x) / m` _____

`x / m` _____

`double(n * m)` _____

`double(n)/ m + y` _____

`double(n / m)` _____

`(int)x % m` _____

5) (18 points) Evaluate the following expressions given the following variable declarations:

```
int z = 6, a = -1, b = 2, w = 2, y = -5;
```

`z / a * b - 2 * w + -y` _____

`-y * w / z - a` _____

`-(z / b) + -b` _____

`-z - b` _____

`(a * ( b + w / y * a ) - z)` _____

`(a * z + a + a + a * w)` _____

6) (6 points) Write the following expressions in C++ if all the variables (`a`, `c`, `d`, `e`, `u`, `v`, `w`) are all of type `double`.

a) $\dfrac{\left(a\sqrt{c}\right)+d}{e(u-v)}$

b) $|a|+c\left(\sqrt{uvw}\right)$

7) (3 points) What is the divide and conquer approach?

8) (2 points) Every C++ program consists of at least how many functions? _____

9) (3 points) Write a C++ declaration that gives the name `Loser` to the value '0';

10) (4 points) Declare a `char` variable named `middle_initial` and a `string` variable named `first_name`.

11) (2 points) Assign the value `"Albert"` to the `string` variable `first_name`.

12) (3 points) What does the following code segment print out?

```
string str;
str = “Abraham”;
cout << “The answer is ” << endl << endl << str  +
        “Lincoln” << endl << “ so, there”;
```

13) (2 points) An algorithm is the same thing as a program. (T or F) _____

14) (5 points) Show precisely what is output by the following statement.

```
cout << “A rolling” << endl << “stone” << endl
     << “gathers” << endl << endl << endl << “no”
     << “moss” << “ or so they say.” <<endl << endl
     << “Anonymous”;
```

15) (2 points) A variable of type `char` can be assigned to a variable of type `string`. (T or F) _____

16) (3 points) Write a C++ constant declaration that gives the name `E` to the value 2.7128.

17) (4 points) Declare an `int` variable named `sum` and a `float` variable named `stars`.

18) (4 points) Add type casts to the following statements to make the type conversions clear and explicit. Your answers should produce the same results as the original statements.

a. `someInt = 5 + someFloat;`
b. `someInt = 2.5 * someInt / someFloat;`

19) (2 points) Which part of the following function call is its argument list?

```
Square(someInt + 1);
```

20) (2 points) In the statement

```
Beta(gamma, delta);
```

would you conclude that `Beta` is a value-returning function or a void function?

21) (8 points) Assume the `float` variable `pay` contains the value 12000485.43295. Using the `fixed`, `setw`, and `setprecision` manipulators, what output statement would you use to print `pay` in dollars and cents with five leading blanks?