COSC235A Spring 2008
Quiz #1

Please read each question carefully and be sure to give complete answers. Work quickly and good luck!

1. (1 pt.) Print your name: _____

2. (10 pts.) For each of the follow, indicate whether it is a valid Python identifier or explain in two or three words why it isn't.

a) `def`

b) `_Inflation_Rate`

c) `Unit-cost`

d) `ThisIsAReallyLongNameThatIsHardToTypeCorrectlyEachTime`

e) `6PackJoe`

3. (10 pts.) What are the results of each of the following operations?

a) `1 + 2 * 4 / 3 % 5`

b) `123 % 100 / 10`

c) `15 / 6 / 3.0`

d) `round(-7.9)`

e) `math.floor(-2.4)`

4. (10 pts) Given:

```
st1 = "  hOw nOw cOw  "
```

(In this assignment, `st1` has two leading and two trailing blanks.) Tell what is the printed or explain why the operation produces an error. Use a "~~b~~" to denote blanks in the output. You may assume the string library has been loaded.

a) `print st1.upper()`

b) `print lower(st1)`

c) `print find(st1, "w")`

d) `print replace(st1, "w", "ow")`

e) `print len(st1)`

5. (6 pts.) Convert 1010011_2 to decimal showing your work.

6. (6 pts.) Convert 61_{10} to binary showing your work.

7. (6 pts.) Write a Python expression to evaluate $\frac{3\sin(x)+\sqrt{2x^3-1}}{x+1}$.

8. (8 pts.) Given `st1 = "quintessential"`. Use string *slices* to extract the following:

a) `"quint"`

b) `"al"`

c) `"tess"`

d) `"l"`

9. (6 pts) Using `range()`, write code that will generate the following lists of numbers:

a) `[100, 98, 96, 94, 92, 90]`

b) `[-7, -4, -3, -2, -1, 0, 1, 2, 3]`

c) `[2, 5, 8, 11, 15, 18]`

10. (3 pts.) What is the final value of `x`, `y`, and `z`?

```
x, y, z = 1, 2, 3
x, y, z = x, y, x
x, z, y = z, y, x
```

11. (6 pts.) Write a loop in Python that will print the table that follows as formatted. The print statement should use embedded string formatting.

```
$  0.00
$ 20.00
$ 40.00
$ 60.00
$ 80.00
$100.00
```

12. (8 pts.) What will be printed by the following code? If the code fails to *execute* at some point, indicate the problem and the point at which the problem occurs.

```
x = 10
y = 20

def spam1():
   x = 2*x + 1
   y = 2*y + 1
   return x, y

def spam2(x, y):
   x = x + 1
   y = y + 1

x, y = spam1(x, y)
print x, y

x, y = spam2(x, y)
print x, y
```

13. (10 pts.) Write an interactive program `bmi()` that calculates body mass index using the formula:

$$bmi = 703 \times \frac{weight}{height \times height}$$

Weight is entered in pounds and height in inches.

14. (10 pts.) Using `ord()` and `chr()`, write a function `next()` that will take word and return a new word that has each letter replaced with the next letter in the alphabet. For example, `next("hal")` would *return* `"ibm"`. (You don't need to worry about words with "`z`".)

Pledged: _____