

Spring 2014 Introduction to Computer Programming (COP 3223) Test #1 Section 4

First Name: _____ Last Name: _____

Note: Please use Python syntax to respond to each programming question.

1) (6 pts) Give a list of three escape sequences. List both the character and its code.

Character	Code

2) (4 pts) Write a single line of code that prompts the user with, “Please enter your grade point average.”, and stores her response in the variable gpa.

3) (10 pts) Give two different examples where using modulus (%) and integer division (//) help solve a problem.

1. _____

2. _____

4) (10 pts) What is the output of the following segment of code:

```
a = 1
b = 3
for i in range(5):
    print(b, end = " ")
    b = b + a
    a = a + 2
```

5) (4 pts) What is the output of the following segment of code:

```
a = 2
b = 1
if a > b or b < a:
    print("A", end = " ")
if 2*b > a:
    print("B", end = " ")
elif (3*b+2)%(2*a) < 2:
    print("C", end = " ")
else:
    print("D", end = " ")
```

6) (10 pts) What is the output of the following segment of code?

```
str = "PYTHONCLASS"
print(str[3:7])
print(str[:6])
print(str[7:])
print(str[-5:-2])
print(str[:-8])
```

7) (10 pts) What is the output of the following segment of code? Note that the output is not unique, since sets can be listed in any order. Any valid answer will be counted as correct.

```
listx = [1,6,7,9,12,14]
listy = [2,4,6,9,12]
x = set(listx)
y = set(listy)
print(x & y)
print(x | y)
print(x ^ y)
print(x - y)
print(y - x)
```

8) (10 pts) Assume that a given list, `namelist`, contains unique names, all lowercase, that each start with a different letter. Use this list to create a dictionary named `lookup`, that maps the first letter of each of these names to the names themselves. For example, if `namelist = ['anne','emma','george']`, then `lookup` should be `{'a': 'anne', 'e': 'emma', 'g': 'george'}` after your code segment completes.

9) (15 pts) McKnights Food Stuffs sell chicken nuggets in two packages: 6 piece and 20 piece. The cost of the former is \$2 and the cost of the latter is \$5. Given a total number of nuggets you want to buy, complete the program below so that it determines the minimum price of obtaining the desired number of nuggets (or more).

```
COST6 = 2  
COST20 = 5
```

```
def main():
```

```
    n = int(input("How many chicken nuggets do you want to buy?"))  
    cost = 0
```

```
    print("The minimum cost to get",n,"nuggets is",cost,"dollars.");
```

```
main()
```

10) (20 pts) Complete the program below so that it prints out a chart of the value of a savings account at the end of each year. The account earns 3% interest each year but the user is charged a \$50 fee at the end of the year right after the interest accrues. Ask the user how much they put into the account initially, how much they contribute each year thereafter, and how many years they keep the account. Based on this information, print out a chart with how much money is in the account at the end of each year, starting with year 1. For example, if the user initially puts \$10,000 in the account, after 1 year, $\$10,000 \times .03 = \300 accrues in interest, of which \$50 goes to the annual fee, leaving \$10250 after year 1. If in every following year \$750 is put into the account at the end of the second year $\$11000 \times .03 = \330 interest accrues, leaving \$11280 in the account after the end of the second year, since the annual fee must be deducted again. **(Note: This is just an example. Your program should work for all valid input values, not just \$10000 and \$750!!!)**

```
RATE = 0.03
YEARLYFEE = 50
```

```
def main():
```

```
    initMoney = float(input("What's the starting value?\n"))
    yrMoney = float(input("What's the annual contribution?\n"))
    numYears = int(input("How many years will you invest?\n"))
```

```
    for year in range( _____ , _____ ):
```

```
main()
```

11) (1 pt) In what Winter Olympic sport is the curling stone used?

Scratch Page – Please clearly mark any work on this page you would like graded.