# Spring 2015 COP 3223 Section 4 Exam #1 Multiple Choice
## ***VERSION A***

1) What is the value of the following arithmetic expression in Python?

```
17//3 - 17%3
```

A) 0 B) 1 C) 2 D) 3 E) None of the Above

2) What is the output of the following Python statement?

```
print("I","am","going","home", sep="__")
```

A) Iamgoinghome
B) I am going home
C) I__am__going__home
D) I __ am __ going __ home
E) None of the Above

3) Which of the following prints out the approximate circumference of a circle with the value of the radius entered by the user? Note: no prompt is made so the answer can fit on a single line of code. Assume math is imported already.

A) print(2*math.pi*float(input("")))
B) print(math.pi*float(input("")))
C) print(2*math.pi*input(""))
D) print(math.pi*float(input(""))*float(input("")))
E) None of the Above

4) What is the output of the following segment of code?

```
x = 3
y = 5
if 2*x > y:
    if x > y:
        print("A")
    else:
        print("B")
    print("C")
else:
    print("D")
print("E")
```

A) A B) B C) BC D) BE E) None of the Above

5) Let a, b and c be boolean expressions. Thus each one can take on one of two values and in total they can take on 8 combinations of values. (One of these eight combinations is a = True, b = False and c = False.) How many of these eight combinations make the following boolean expression True?

```
(not (a and b)) or c
```

A) 1 B) 3 C) 5 D) 7 E) None of the Above

6) What is the value of total after the following segment of code completes?

```
total = 17
if total%5 > 1:
    total = total - 4
if total%4 > 1:
    total = total - 3
if total%3 == 1:
    total = total - 1
```

A) 17 B) 13 C) 12 D)9 E) None of the Above

7) Which of the following expressions is guaranteed to be an integer in between 1 and 100, inclusive? Assume random has already been imported.

A) random.randint(0,50) + random.randint(0,50)
B) random.randint(1,50) + random.randint(0,50)
C) random.randint(0,100)
D) random.randint(0,1)*100
E) None of the Above

8) For your third assigment, you used the random.gauss function. Consider the function call random.gauss(70,6). (The first parameter represents the average of the distribution while the second represents the standard deviation.) Which of the following ranges is the result of this function call most likely to lie within?

A) 6 to 12
B) 70 to 76
C) 94 to 100
D) 10 to 20
E) 64 to 76

9) Provided that the loop variable index isn't accessed inside of the body of the loop, which of the following loop structures will repeat the code inside of it exactly 100 times?

A) for index in range(101):
B) for index in range(1, 100):
C) for index in range(100, 199):
D) for index in range(100, 201):
E) None of the Above

10) Which of the following prints out exactly all the even numbers in between 2 and 98, inclusive, and no other numbers?

A)
```
for index in range(2,98):
    print(index)
```
B)
```
for index in range(2,100):
    print(index)
```
C)
```
for index in range(98):
    print(index)
```
D)
```
for index in range(100):
    print(index)
```
E) None of the Above

11) Given that the inside of each of the loops shown has no break statement, determine which one MUST correspond to an infinite loop? (Note: assume that num is an integer variable already set to a value and that num may change inside the loop.)

A)
```
while num != 5:
```
B)
```
while num != 5 or num == 5:
```
C)
```
while num != 5 and num == 5:
```
D)
```
while num > 5 or num < 5:
```
E) None of the Above

12) What is the value of total at the end of the following segment of code?

```
total = 0
for i in range(1,6):
    for j in range(i):
        total = total + 1
```

A) 5 B) 6 C) 10 D) 30 E) None of the Above

13) What is the output of the following segment of code?

```
for i in range(5):
    for j in range(5-i):
        print(j,end=" ")
    print()
```

A)
```
1 2 3 4 5
 1 2 3 4
 1 2 3
 1 2
 1
```

B)
```
5 4 3 2 1
 4 3 2 1
 3 2 1
 2 1
 1
```

C)
```
0 1 2 3 4
 0 1 2 3
 0 1 2
 0 1
 0
```

D)
```
4 3 2 1 0
 3 2 1 0
 2 1 0
 1 0
 0
```

E) None of the Above

14) What is the output of the following segment of code?

```
value = 1
while value%7 != 0:

    while value%5 != 0:
        value = value + 1

    value = value + 1
print(value)
```

A) 7  B) 14  C) 21  D) 35  E) None of the Above

15) Cleveland Cavelier's basketball player Kevin Love shares his last name with what commonly uttered word on Valentine's Day?

A) love  B) hate  C) Montague  D) Capulet  E) cupid

# Spring 2015 COP 3223 Section 4 Exam #1 Free Response

**Name: _____**

1) (10 pts) Regular donuts cost 50 cents and Apple Fritters cost $1.50. Both prices are with tax already included. Complete the program below so that it asks the user how many donuts they are buying and how many apple fritters they are buying and prints out the total cost of their purchase. (Note: no need to define a constant, just hard code .75 and 1.25 for ease of writing.)

```
def main():

    donuts = int(input("How many donuts do you want?\n"))
    fritters = int(input("How many fritters do you want?\n"))




main()
```

2) (10 pts) The regular sales tax is 10%. If you buy 10 or more t-shirts though, as a promotion, Xi and Chi's Knightware store will pay your sales tax for you and just charge you the regular total without tax. Complete the program below so that it prints out the appropriate cost of your t-shirts based on the cost of a single shirt and how many of those you are buying.

```
def main():

    item = float(input("How much is one t-shirt?\n"))
    quantity = int(input("How many of those do you want?\n"))









main()
```

3) (10 pts) An arithmetic sequence is defined by the number of terms it has, its starting term and the common difference between terms. For example, the arithmetic sequence of 5 terms, starting with 8, and with a common difference of 3 is 8, 11, 14, 17 and 20. Complete the program below so that it prints out the sum of the arithmetic sequence specified by the user.

```
def main():
    numterms = int(input("How many terms in your sequence?\n"))
    first = int(input("What is the first term?\n"))
    diff = int(input("What is the common difference?\n"))









main()
```

4) (10 pts) Complete the program below so that it prints out all the prime numbers in between 2 and *n*, inclusive, where *n* is the value entered by the user. (Prime number is an integer only divisible by 1 and itself.)

```
def main():

    n = int(input("Enter the limit of your prime search.\n"))









main()
```