

COP 3223 Section 4 Exam #1

Form A – Multiple Choice

Fall 2014

9/27/2014

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Directions: Answer all multiple choice questions on the scantron. Each question has a single correct answer. In case of ambiguities, choose the most accurate answer. Each of these questions is worth 3 points for a correct answer. Incorrect answers and questions left blank are worth 0 points. Hand in **ONLY** the scantron, keep the test questions, and take the free response section of the exam.

1) Which of the following functions prints output to the screen in C?

- A) print
- B) printf
- C) write
- D) writef
- E) None of the Above

2) What is the value of the following arithmetic expression in C?

$$4+5*2 - 37/(6-1)$$

- A) 6
- B) 6.6
- C) 7
- D) 14
- E) None of the Above

3) Which of the following reads in an integer into the variable num? Assume num is already properly declared as an int.

- A) scan(num);
- B) scan("%d", num);
- C) scan("%lf", num);
- D) num = scan("%d", num);
- E) None of the Above

4) What is the value of the following arithmetic expression in C?

$$(13 + 12\%(2 + 3))/6$$

- A) 2
- B) 3
- C) 4
- D) 5
- E) None of the Above

5) What is the percent code (used in printf,scanf) for an double?

- A) %c
- B) %d
- C) %s
- D) %lf
- E) None of the Above

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

```
int a=3, b=4;
if (a > 3)
    printf("A");
if (b > a)
    printf("B");
if (2*a > b)
    printf("C");
```

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

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

```
int a=4, b=7;
if (a > 3) {
    if (b < 5)
        printf("A");
}
else
    printf("B");
printf("C");
```

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

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

```
int a=12, b=6;
if (a > b)
    a = a - 5;
if (a > b)
    a = a - 5;
printf("%d %d", a, b);
```

A)12 6 B)7 6 C)6 6 D)2 6 E)None of the Above

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

```
int a=2, b=9;
if (a > 3 && b < 10)
    printf("A");
if (a > 1 || b < 9)
    printf("B");
if (!(a > b))
    printf("C");
```

A)A B)B C)C D)AC E)None of the Above

10) Which of the expressions below is closest to 16?

- A) `pow(4,4)` B) `pow(2,4)` C) `sqrt(16)` D) `sqrt(64)`
E) `sqrt(pow(2,4))`

11) Which of the following expressions is guaranteed to be in between 10 and 20, inclusive?

- A) `rand()%20` B) `rand()%10+9` C) `rand()%11+10` D) `rand()%11+11`
E) None of the Above

12) Which of the following expressions represents the sum of the rolls of two fair six-sided dice?

- A) `rand()%12` B) `rand()%11+2` C) `2*(rand()%6)`
D) `rand()%6 + rand()%6` E) None of the Above

13) Which of the following designates a single line comment in C?

- A) `//` B) `#` C) `'''` D) `$` E) None of the Above

14) Which of the following designates a constant in C?

- A) `c_value` B) `int` C) `double` D) `constant` E) None of the Above

15) About what sea creature is the movie "Dolphin Tale 2"?

- A) dolphin B) octopus C) squid D) sea cucumber E) None of the Above

Fall 2014 Introduction to Computer Programming (COP 3223) Exam #1 Free Response

First Name: _____ **Last Name:** _____

1) (5 pts) What is the value of each of the following arithmetic expressions in Python?

a) $7 + 6 * 3$ _____

b) $(2 + 17) // 4$ _____

c) $(2 + 17) / 4$ _____

d) $13 - 200 \% 48$ _____

e) $(14 - 23 // 6) \% 7$ _____

2) (10 pts) Write a complete python program below that asks the user to enter the cost of a cup of coffee (in dollars) and the number of cups of coffee they drink in a week. Using the fact that there are 52 weeks in a year, print out the user's total cost for coffee, for the year. The first value entered may not be an integer, but the second one will be.

```
WEEKS_PER_YEAR = 52
```

```
def main():
```

```
main()
```

3) (10 pts) A science class gives a lab grade and an exam grade, each integers in between 0 and a 100. To award the letter grade, the class uses the following rules:

A: Both grades must be at least 90.

B: The sum of both grades must be at least 160 and the student didn't earn an A.

C: The sum of both grades is at least 140, and both grades are 50 or higher, and the student didn't get an A or B.

F: Didn't satisfy the criteria for an A, B or C.

Complete the program below so that it prints out a student's letter grade.

```
def main():  
  
    lab = int(input("What is your lab grade?\n"))  
    exam = int(input("What is your exam grade?\n"))  
  
    if _____ :  
        print("You get an A.")  
  
    elif _____ :  
        print("You get a B.")  
  
    elif _____ :  
        print("You get a C.")  
  
    else:  
        print("You get a F.")  
  
main()
```

4) (10 pts) Write a segment of python code that simulates rolling a pair of fair six-sided dice 1000 times. Print out the number of times a sum of 12 was achieved.

5) (10 pts) What is printed out by the following segment of code?

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

6) (10 pts) Write a segment of code that prints out all of the ordered pairs of the form (x, y) , where $1 \leq x \leq 20$, and $x < y \leq 20$. You must have a double loop structure in your segment of code to get full credit and you must not hard code any value but 1 or 20. Print one ordered pair per line, in order sorted by x , and then sorted by y .