

COP 3223 Section 4 Exam #2
Form A – Multiple Choice
Fall 2014
11/1/2014

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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.

The first three questions concern the output of the following C program:

```
#include <stdio.h>
int f(int a, int b);

int main() {
    int a = 2, b = 7;
    b = f(b+a, b-a);
    printf("a = %d\n", a);
    printf("b = %d\n", b);
    return 0;
}

int f(int a, int b) {
    a += 3;
    b = 2*a - b + 5;
    printf("a = %d, b = %d\n", a , b);
    return a+b;
}
```

1) What is the output of the first line of the program?

A) a = 3, b = 11 B) a = 10, b = 23 C) a = 12, b = 24

D) a = 7, b = 17 E) None of the Above

2) What is the output of the second line of the program?

A) a = 2 B) a = 3 C) a = 7 D) a = 12

E) None of the Above

3) What is the output of the third line of the program?

A) b = 7 B) b = 23 C) b = 24 D) b = 36

E) None of the Above

4) Assume that x is an integer variable. Which of the following represents the memory address where x is stored?

A) x B) &x C) *x D) 2*x E) None of the Above

5) Which of the following opens the file "a.txt" to write to?

A) FILE* ifp=open("a.txt"); B) FILE* ifp=fopen("a.txt")
C) FILE* ifp=open("a.txt","w"); D) FILE* ifp=fopen("a.txt","r");
E) None of the Above

Questions 6 - 8 concern the output of the following C program:

```
#include <stdio.h>
int g(int *a, int *b);

int main() {
    int a = 2, b = 7;
    b = g(&b, &a);
    printf("a = %d\n", a);
    printf("b = %d\n", b);
    return 0;
}

int g(int *a, int *b) {
    (*a) = (*a) + 3;
    (*b) = 2*(*a) - (*b) + 5;
    printf("a = %d, b = %d\n", *a , *b);
    return (*a)+(*b);
}
```

6) What is the output of the first line of the program?

- A) a = 3, b = 11 B) a = 10, b = 23 C) a = 12, b = 24
D) a = 7, b = 17 E) None of the Above

7) What is the output of the second line of the program?

- A) a = 2 B) a = 3 C) a = 7 D) a = 12
E) None of the Above

8) What is the output of the third line of the program?

- A) b = 7 B) b = 23 C) b = 33 D) b = 36
E) None of the Above

9) Which of the following is potentially a valid formal parameter to some function?

- A) 3 B) 17 C) x D) x + y E) None of the Above

10) Which of the following is true of arrays in C?

- A) Their names must start with a letter.
B) They can have no more than 10000 slots.
C) They must store integers or characters.
D) They are defined using a for loop.
E) None of the Above

Questions 11 - 14 concern the output of the following C program:

```
#include <stdio.h>
void mixarray(int array[], int length);

int main() {
    int vals[] = {3, 8, 2, 7};
    mixarray(vals, 4);
    int i;
    for (i=0; i<4; i++)
        printf("vals[%d] = %d\n", i, vals[i]);
    return 0;
}

void mixarray(int array[], int length) {
    int i;
    for (i=1; i<length; i++)
        array[i] += array[i-1];
}
```

11) What is the output of the first line of the program?

- A) vals[0] = 0 B) vals[0] = 3 C) vals[0] = 8 D) vals[0] = 11
E) None of the Above

12) What is the output of the second line of the program?

- A) vals[1] = 8 B) vals[1] = 11 C) vals[1] = 13 D) vals[1] = 20
E) None of the Above

13) What is the output of the third line of the program?

- A) vals[2] = 2 B) vals[2] = 10 C) vals[2] = 13 D) vals[2] = 20
E) None of the Above

14) What is the output of the fourth line of the program?

- A) vals[3] = 7 B) vals[3] = 9 C) vals[3] = 13 D) vals[3] = 20
E) None of the Above

15) Who wrote the Autobiography of Malcolm X?

- A) Malcolm X B) Martin Luther King Jr. C) Ken Burns
D) Malcolm Gladwell E) Steven King