# Qualifying Quiz

14.2/15 points earned (94%)

Retake

Course Home

Excellent!



1/1 points

1.

This test is meant to test your knowledge of C programming and some basic computer science-related skills you will need to do well in this class. The outcome of the test is for your use only; it will not affect whether you can register for the class, and it will not apply to your grade if you do register. As such, we recommend that you do not research the answers on the Internet, but answer the questions to your best recollection.

Consider the following variable declaration for  ${f bar}$  in the function  ${f foo}$ 

```
1 void foo() {{
2   char bar[128];
3   ...
4 }
```

Which of the following are true?



Holds 128 elements

#### **Correct Response**



bar[1] contains the first element

#### **Correct Response**

Array indexing starts at 0 in C.



All elements are initialized to 0

#### **Correct Response**

Local variables provide no guarantees about initialization.

<b>~</b>	

1/1 points

2.

Consider the following code fragment:
sizeof(int\*) == sizeof(int). Which one of the following is true
about it?



This fragment's result depends on the compiler and architecture



#### **Correct Response**

This is the best answer.

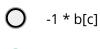
0	This fragment always evaluates to 0 (assuming it doesn't crash)
0	This fragment always evaluates to 1 (assuming it doesn't crash)
0	This fragment will not compile
0	This fragment will always crash



1/1 points

3.

Suppose you are compiling for a 32-bit platform and sizeof(int) == 4. Which one of the following is equivalent to c[b] if c is of type int\* and b is of type int?





0	*c+b
0	none of the above
$\bigcirc$	c[b][0]

```
0.4 / 1 points
```

#### 4.

Consider the following program.

```
1 #include <string.h>
2
3 int foo(void) {
4    char bar[128];
5    char *baz = &bar[0];
6    baz[127] = 0;
7    return strlen(baz);
8 }
```

What are possible outcomes from running this function? Check all that apply (note that the outcomes shown are not exhaustive):



returns 0

#### **Incorrect Response**

The uninitialized variable could have a 0 at bar[0], which would make its length 0.



returns 127

#### **Incorrect Response**

If the uninitialized variable contains all non-zeroes, then the string will be zero-terminated by the bar[127] = 0 statement



returns 128

#### **Incorrect Response**

The zero terminator at the last position is not considered part of the length.



crash

#### **Correct Response**



returns -1



1/1 points

5.

Consider the following code fragment.

```
1 char blah[] = "fizzbuzz";
2 printf("%s\n", blah+4);
```

What happens if we try to compile and run this code?

O The program outputs "fizz"

The program outputs "buzz"

#### **Correct Response**

The program outputs a blank line depending on the size of pointers

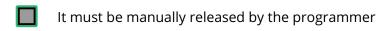
The program is illegal C and may not compile



1/1 points

6.

Which of the following are true of memory returned via the malloc function? Check all that apply.



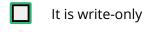
#### **Correct Response**

The memory is zero-initialized

#### **Correct Response**

It is automatically released by the operating system when the pointer to which the memory is assigned goes out of scope

#### **Correct Response**



#### **Correct Response**



1/1 points

# 7. Consider the following code

```
#include <stdio.h>
    #include <stdlib.h>
 3
 4 int main(int argc, char *argv[]) {
 5
      unsigned int i;
 6
      unsigned int k = atoi(argv[1]);
 7
      char *buf = malloc(k); /* 1 */
 8
      if(buf == 0) {
 9
        return -1;
10
11
12
      for(i = 0; i < k; i++) {
       buf[i] = argv[2][i]; /* 2 */
13
14
15
      printf("%s\n", buf); /* 3 */
16
17
18
      return -1;
19
    }
```

- O This program could crash at position 1
- This program could crash at all 3 positions
- O This program could crash at position 2
- This program could crash at position 3
- This program could crash at 2 and 3

### **Correct Response**

O This program could crash at 1 and 2

points

8. Which	of the following are true statements about the program stack?			
	It is used to store global variables while executing a function			
Inco	rrect Response			
	It is used as the source of memory returned by malloc()			
Corr	ect Response			
	It is used to store local variables while executing a function			
Correct Response				
	Management of the stack is handled automatically by the architecture			
Corr	ect Response			
<b>~</b>	1 / 1 points			
9. Which	of the following are true of the X86 call instruction?			
	Pushes the instruction pointer value onto the stack			
Correct Response				
	Pushes flag registers onto the stack			
Corr	ect Response			
	Its target address may be specified in a general-purpose register			



Branches to a specified address

#### **Correct Response**



1/1 points

10.

Consider the following program

```
#include <stdlib.h>
 2
    #include <stdio.h>
 3 #include <string.h>
 4
 5 int main(int argc, char *argv[]) {
      int **blah2 = malloc(sizeof(int*)*N);
 6
      int *special = NULL;
 7
 8
      int i, j;
 9
      for(i = 0; i < N; i++) {
10
        int *tmp = (int *)malloc(sizeof(int)*M);
11
        memset((void *)tmp, 0, sizeof(int)*M);
12
13
        if(i > N) {
          special = &tmp[3];
14
15
        }
16
        blah2[i] = tmp;
17
18
19
      if(special != NULL) {
20
        *special = 7;
21
22
23
      for(i = 0; i < N; i++) {
        for(j = 0; j < M; j++) {
24
          printf("%d ", blah2[i][j]);
25
26
27
        printf("\n");
28
29
30
      return 0;
31
    }
```

Assuming we **#define N** and **M** to be positive integers, and the calls to **malloc()** succeed (the arguments do not overflow, and do not return **NULL**), then which of the following is true?

- This is not a valid C program
- O This program outputs a random NxM matrix



This program outputs a zero NxM matrix

0	This program outputs a matrix with at least one element being 7			
0	This program crashes			
<b>1</b> 1.	1 / 1 points			
What is	TCP?			
0	It is a protocol that supports reliable data transfer on the Internet			
Correct Response				
0	It is connectionless			
0	It is a protocol often implemented on top of HTTP			
0	It ensures data confidentiality			
<b>~</b>	1/1 points			
12. What is	s PHP? Pick one.			
0	The acronym for a coding standard			
0	A programming language often used to implement web sites			
Corre	ect Response			
0	A programming language often used to implement network switches			
0	A network protocol			

<b>~</b>	1 / 1 points			
13. Which	of the following statements about HTML are true?			
	Web browsers render HTML content served by web sites			
Correct Response				
	HTML documents have tags that identify different sorts of data			
Correct Response				
	HTML is a text-based format (as opposed to a binary format)			
Corr	ect Response			
	HTML is a kind of URL			
Correct Response				
<b>~</b>	1 / 1 points			
14. What i	s gcc?			
0	An interpreter			
0	A compiler			
Corr	ect Response			
0	A virtual machine			
0	All of the above			



points

15.

The shell command cd; Is \*.xml

- Will list all files ending in the xml suffix in the previous working directory
- Will list all of the files listed in the given XML file
- Will list the file \*.xml in the current directory
- Will list all files ending in the xml suffix in user's home directory





