Feedback — Qualifying Quiz

Help

You submitted this quiz on **Mon 20 Oct 2014 11:17 AM PDT**. You got a score of **16.50** out of **20.00**.

This test is meant to test your background and understanding of the basic computer science 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. As such, we recommend that you do not research the answers on the Internet, but answer the questions to your best recollection.

Question 1

Consider the following code fragment: `sizeof(int*) == sizeof(int)`

Which one of the following is true about it?

Your Answer	Score	Explanation
This fragment always evaluates to 1 (assuming it doesn't crash)		
This fragment always evaluates to 0 (assuming it doesn't crash)		
This fragment will always crash		

This fragment's result depends on the compiler and architecture	✔	1.00
This fragment will not compile		
Total		1.00 / 1.00

Question 2

Consider the following code

```
#include <stdio.h>
#include <stdlib.h>
int main(int argc, char *argv[]) {
  unsigned int i;
  unsigned int k = atoi(argv[1]);
  char     *buf = malloc(k); /* 1 */

  if(buf == 0) {
    return -1;
  }

  for(i = 0; i < k; i++) {
    buf[i] = argv[2][i]; /* 2 */
  }

  printf("%s\n", buf); /* 3 */
```

```
  return -1;
}
```

Your Answer		Score	Explanation
This program could crash at position 3			
This program could crash at position 2			
This program could crash at all 3 positions			
This program could crash at 2 and 3	✔	1.00	
This program could crash at 1 and 2			
This program could crash at position 1			
Total		1.00 / 1.00	

Question 3

Which one of the following is equivalent to `c[b]` if `c` is of type `int32_t*` and `b` is of type `int32_t` ?

Your Answer		Score	Explanation
`*(c+b)`	✔	1.00	
`*c+b`			
`-1 * b[c]`			
none of the above			
`c[b][0]`			
Total		1.00 / 1.00	

Question 4

Consider the following variable declaration

```
char  bar[128];
```

Which of the following are true?

Your Answer		Score	Explanation
All elements are 0	✖	0.00	

☐ bar[1] contains the first element	✖	0.00
☑ Holds 128 elements	✔	1.00
Total		1.00 / 1.00

Question 5

Consider the following program.

```
#include <string.h>
int foo() {
  char  bar[128];
  char  *baz = &bar[0];

  baz[127] = 0;

  return strlen(baz);
}
```

What are possible outcomes from running this function? Check all that apply:

Your Answer		Score	Explanation
☐ returns -1	✖	0.00	

☐ returns 127	✖	0.00
☐ crash	✖	0.00
☑ returns 128	✖	0.00
☐ returns 0	✖	0.00
Total		0.00 / 2.00

Question 6

Consider the following code fragment.

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

What happens if we try to compile and run this code? Check all that apply.

Your Answer		Score	Explanation
◉ The program is illegal C and may not compile	✖	0.00	
○ The program outputs "fizz"			

○ The program outputs "buzz"	
○ The program outputs a blank line depending on the size of pointers	
Total	0.00 / 1.00

Question 7

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

Your Answer		Score	Explanation
☐ The memory is zero-initialized	✖	0.00	
☑ It must be manually released by the application	✔	1.00	
☐ It is write-only	✖	0.00	
☐ It is automatically released by the operating system when the pointer is out of scope	✖	0.00	
Total		1.00 / 1.00	

Question 8

Which of the following are true statements about the program stack?

Your Answer		Score	Explanation
☐ Management of the stack is handled automatically by the architecture	✖	0.00	
☐ The stack is managed by code emitted by the compiler	✖	0.00	
☐ It is used to store global variables while executing a function	✖	0.00	
☐ It is used as the source of memory returned by malloc()	✖	0.00	
☑ It is used to store local variables while executing a function	✔	0.50	
Total		0.50 / 1.00	

Question 9

Which of the following are true of the X86 `call` instruction?

Your Answer	Score	Explanation

☑ Pushes the instruction pointer value onto the stack	✔	1.00
☐ Pushes flag registers onto the stack	✖	0.00
☑ Branches to a specified address	✔	1.00
☑ Its target address may be specified in a general-purpose register	✔	1.00
Total		3.00 / 3.00

Question 10

Consider the following program

```
#include <stdlib.h>
#include <stdio.h>
#include <string.h>
int main() {
  int **blah2 = malloc(sizeof(int*)*N);
  int *special = NULL;
  int i, j;
  for(i = 0; i < N; i++) {
    int *tmp = (int *)malloc(sizeof(int)*M);
    memset((void *)tmp, 0, sizeof(int)*M);
```

```
    if(i > N) {
      special = &tmp[3];
    }

    blah2[i] = tmp;
  }

  if(special != NULL) {
    *special = 7;
  }

  for(i = 0; i < N; i++) {
    for(j = 0; j < M; j++) {
      printf("%d ", blah2[i][j]);
    }
    printf("\n");
  }
}
```

Assuming we `#define N` and `M` to be positive integers, then which of the following is true

Your Answer		Score	Explanation
(•) This program outputs a zero NxM matrix	✔	1.00	
( ) This program crashes			
( ) This is not a valid C program			

This program outputs a random NxM matrix			
This program outputs a matrix with at least one element being 7			
Total		1.00 / 1.00	

Question 11

What is TCP?

Your Answer		Score	Explanation
It is a protocol that supports reliable data transfer on the Internet	✔	1.00	
It is a protocol often implemented on top of HTTP			
It is connectionless			
It ensures data confidentiality			
Total		1.00 / 1.00	

Question 12

What is PHP? Pick one.

Your Answer		Score	Explanation
○ A network protocol			
○ A programming language often used to implement network switches			
○ The acronym for a coding standard			
◉ A programming language often used to implement web sites	✔	1.00	
Total		1.00 / 1.00	

Question 13

Which of the following statements about HTML are true?

Your Answer		Score	Explanation
☐ HTML is a kind of URL	✖	0.00	

☑ HTML documents have tags that identify different sorts of data	✔	1.00
☑ Web browsers render HTML content served by web sites	✔	1.00
☑ HTML is a text-based format (as opposed to a binary format)	✔	1.00
Total		3.00 / 3.00

Question 14

What is gcc?

Your Answer		Score	Explanation
○ An interpreter			
◉ A compiler	✔	1.00	
○ A virtual machine			
○ All of the above			
Total		1.00 / 1.00	

Question 15

The shell command `cd; ls *.xml`

Your Answer		Score	Explanation
○ Will list all files ending in the xml suffix in the previous working directory			
◉ Will list all files ending in the xml suffix in user's home directory	✔	1.00	
○ Will list the file *.xml in the current directory			
○ Will list all of the files listed in the given XML file			
Total		1.00 / 1.00	