

UMass Boston CS 240 Test 1 Practice Questions

Posted on September 24, 2019

Name: _____ Student Number: _____

By signing, I certify that I have neither given nor received unauthorized assistance on this test.

Signature _____

Instructions

1. **Turn off all digital devices.**
2. One cheat sheet of your own is allowed.
3. Data type storage specification is on first page.
4. Precedence, ASCII and printf reference table are allowed.

Data Type Specification

- char: 1 byte
- int: 4 bytes
- short: 2 bytes
- long: 8 bytes
- long long: 8 bytes
- float: 4 bytes
- double: 8 bytes
- signed int: is int
- unsigned int: or just unsigned

1. You are `user99`, and your current working directory is `/home/user99/hw3`.

```
/
+-- home
  +-- ming
    |   +-- 240
    |       |-- hw1
    |       |   +-- hello.c
    |       |
    |       +-- hw3
    |           |-- itox.c
    |           |-- itox.h
    |           |-- itoxDriver.c
    |           +-- test.txt
  +-- user99
    +-- hw3
    |   +-- itoxDriver.c
    |
    +-- homework3
        +-- itoxDriver.c
```

- (a) Copy both `itox.c` and `itox.h` from Ming's directory to your `hw3` directory in one command.
- (b) What is the command to compile `hello.c` into executable `hello.out`
- (c) What is the option that asks the compiler to display all warning messages?
- (d) Delete your `homework3` directory in one command.

2. Are the following identifiers valid C variable names? If you answer no, explain why.
- (a) `continue`
 - (b) `finished!`
 - (c) `Volatile`
 - (d) `year-2018`
 - (e) `__letMeThink`

3. (a) `int i = -5;`

`printf("%x", i);`

What is the output from the `printf` statement and why?

(b) Complete this function so that the char array `rev` contains the reversed string of the char array `from`. `rev` and `from` have the same length, of course. Close the braces when you are done.

```
void reverse(char rev[], char from[])
{
```

4. `char msg[] = "\"hello\"\\n\";`

`double x = 8.0;`

`double y = x / 3;`

`printf("%s", msg);`

`printf("%6.3lf\\n", y);`

- (a) (5 points) How many bytes of memory are allocated for `msg`?
- (b) (10 points) What is the output from the two `printf` statements?

```
5. unsigned char beagle = 0xCC;
   unsigned char pug = 0x44;
   char puggle = beagle / 6 >= 32 || pug - 25 % 10 >> 4;

   printf("beagle = %u, pug = %u\n", beagle, pug);
   if (puggle)
       printf("result = puggle\n");
```

(a) (5 points) Fully parenthesize this expression to reflect the precedence.

beagle / 6 >= 32 || pug - 25 % 10 >> 4

(b) (10 points) What is the output from the two `printf` statements?

6. Quinary (base-5, pental) numbers.

(a) Convert the decimal number 345_{10} to quinary.

(b) Convert the quinary number 1324_5 to decimal.

(c) Add these two quinary numbers in quinary: 1324_5 and 11234_5 . Show your work.