ME 333 Introduction to Mechatronics

Name _____________________

C quiz

1. Write the following in 2-digit hex.
   (a) 0xA2 & 0x06  
       0x02
   (b) 0xB9 >> 3  
       0x17

2. How many bytes are typically used to store a
   (a) char?  1
   (b) int?   4
   (c) float? 4

3. You are given the following C code in a function:

   ```c
   int num=9; float den=2; float ans1, ans2;
   ans1 = num/den; ans2 = num/((int) den);
   ```

   (a) What is the value of `ans1`? 4.5
   (b) What is the value of `ans2`? 4 (or 4.0)

4. You are given the following C code:

   ```c
   double d; float f; int i; int *ip;
   ip = &i;
   scanf("%f %lf %d", --MISSING CODE--
   processData(ip, f, d);
   ```

   (a) Finish the last half of line 2, i.e., replace -- MISSING CODE --
       `&f, &d, ip);` or `&f, &d, &i);`

   (b) Give a line of C code with a correct prototype for processData().
       ```c
       void processData(int *a, float b, double d);
       ```

5. The code below is inside a function, so `x` and `arr` are local variables. Give the value of `x` after each line below, or write error/unknown.

   ```c
   int x, arr[5] = {5, 4, 3, 2, 1}; // (a) x equals err/unk
   x = arr[5];                      // (b) x equals err/unk
   x = *arr;                        // (c) x equals 5
   x = &arr;                        // (d) x equals err/unk
   x = *(arr+3);                    // (e) x equals 2
   x = *(&arr[2]) - 2) + 4;        // (f) ?? 9 or err/unk OK
   x = arr[*(arr+2)];               // (g) x equals 2
   ```

6. Write the output of the following loop:

   ```c
   int i;
   for (i = 10; i != 7; i--) printf("%d ",i);  
   ```

   10 9 8