ME 333 Introduction to Mechatronics
C quiz

1. Write the following in 2-digit hex.
   a. 0xA2|0x06   0xA6
   b. 0xB7>>2   0x2D

2. How many bits (not bytes!) are typically used to store a:
   ```
   a. char?              8 bits
   b. unsigned int?      32 bits
   c. float?             32 bits
   ```

3. Name two things that the preprocessor does

   Strips comments out of the code, replaces constants initialized with #define, replaces macros, and brings in header function prototypes/constants.

4. You are given the following C code inside the main function:

   ```
   float f; int i; char str[100];
   scanf("%f %d", -- MISSING CODE --
   ```

   (a)   Finish the last half of line 2, i.e., replace – MISSING CODE --,
       &f, &i);
   (b)   Part b was excluded from the quiz grade.

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.

   ```
   int x, arr[5] = {1, 2, 3, 4, 5}; // (a) x equals err/unk
   x = arr[5];                      // (b) x equals err/unk
   x = *arr;                        // (c) x equals 1
   x = &arr;                        // (d) x equals err/unk
   x = *(arr+3);                    // (e) x equals 4
   x = *(&arr[2])-1)+4;             // (f) x equals 6
   x = arr[*(arr+2)];               // (g) x equals 4
   ```

6. Write the output of the following loop:

   ```
   int i;
   for (i = 9;i >= 6; i--) printf("%d ",i);
   ```

   9 8 7 6