1. Explain the meaning of static typing and dynamic typing. Provide an example code that has no type errors if the language uses dynamic typing, but would have type errors if the language uses static typing.

2. Learn the IEEE 754 Floating Point Number Representation by reading Section 5.3 of our textbook. Then answer the following questions:
   (a) What is the 32-bit floating point bit representation for 0.1?
   (b) What is the 32-bit floating point bit representation for 1.0?

3. Explain the meaning of the following C declarations, and write down the size of variables a, b, c, and d.

   ```c
   float *a;
   float * b[100];
   union {int x; float y; double z;} c;
   enum {Monday, Tuesday, Wednesday} d;
   ```

4. What is the difference between a big-endian and a little-endian machine? Cite at least one computer architecture of each kind.

5. Consider the following C declaration, compiled on a 32-bit machine (assuming row-major layout for array elements):

   ```c
   struct {
       int n;
       char c;
   } A[10][10];
   ```

   If the address of A[0][0] is 1000 (decimal), what is the address of A[7][3]?