Assignment10

1. [3 pts] List the three groups of a machine's instructions and give a specific example of instruction of each group.

Using the machine language in Appendix C of the textbook[1], answer the following questions.

2. [2 pts] For the following instructions, try to compute how many different instruction instances can each instruction pattern of the machine have.
   (a) Op-code = 2
   (b) Op-code = 4
   (c) Op-code = A
   (d) Op-code = C
3. [2 pts] Translate the following instruction from English into the machine language. (Answer in hexadecimal format)
   (a) STORE the bit pattern found in register *2* in the memory cell whose address is *10*.
   (b) JUMP to the instruction located in the memory cell at address *DE* if the bit pattern in register *C* is equal to the bit pattern in register number 0. Otherwise, continue with the normal sequence of execution.

1. [3 pts]

   The data transfer group: LOAD/STORE

   The arithmetic/logic group: AND/OR/XOR/SHIFT/ROTATE

   The control group: JUMP/BRANCH

2. [2 pts] 16^3; 16^2; 16^2; 1;

3. [2 pts] 3210; BCDE

[1] J.G.Brookshear, "Computer Science: An Overview," Addison-Wesley, 2011(11th Edition)