

**Computer Architecture
Spring 2017**

**Homework No. 6
(Due on May 22)**

1. $X = 14.5, Y = -37.875$.
 - a. Represent A and B using IEEE standard single precision floating-point format. (5)
 - b. Show the computation step of $X * Y$, and represent the product in the floating-point format. (10)

2. What is the value of 'operation', 'Carryin', and 'bnegate' of the first stage (LSB) of the ALU of Lecture note p. 57 of Chap 3 if ' $\text{slt } \$1, \$2, \$3$ ' is executed? (10)

3. Design and draw a 4-bit ALU which supports add, or, and, shift left 1 bit as Lecture note p. 58 of Chap 3. You also need to separately draw the internal structure of one stage like p. 57. (25)