

Name _____

Box _____

Due date: Tuesday April 3

ECE130

Homework #11

Spring 2001

(Hex, BCD, adder)

- 1 Carry out the following hex additions by hand. The sums could be three hex digits.

(a) $\$74 + \$56 =$ _____ (1b) $\$E8 + \$54 =$ _____

- 2 Carry out the following BCD additions by hand and the sums could be three digits and must be in BCD as well.

(b) $\$58 + \$69 =$ _____ (2b) $\$17 + \$33 =$ _____

- 3 Construct an 8-bit (two hex digits) adder with two 74LS83 chips where the carry-out of the lower hex digit is connected to the carry-in of the higher digit. Connect four hex keypads to the four hex digits of the addend and augend and tie the first carry-in to "0". Connect two hex displays to the two sum hex digits and a binary probe to the final carry-out.

Carry out the following hex additions with your 8-bit adder and fill the corresponding sums, which could be three hex digits. Make sure you don't mix up lower and higher hex digits.

Attach your circuit schematic with hex displays and hex keypads shown.

(c) $\$FF + \$10 =$ _____

(d) $\$45 + \$76 =$ _____

(e) $\$F3 + \$1D =$ _____

(f) $\$BB + \$AA =$ _____