EE 371 First Semester Test - Thursday October 28, 2000
55 Points, 16.667% of Final Grade

Please put your name on the outside of the paper also. Name ___KEY_____
Hand in the test folded so your name shows on the outside.

1. The data in memory locations $5000 - $500F, as shown by a MD 5000 command in the Dbug-12 monitor is:

5000 00 23 42 00 - 60 00 65 02 - 11 22 48 65 - 6c 70 4d 65 #B..'.e.."HelpMe

Give the addressing mode used, the effective address for the source data, and the results for each of the following instructions: (25 points)

Instruction	Addressing Mode	Effective Address	Results
ldx #$5000	Immediate	PC+1:PC+2	X = $5000
ldx $500e	Extended	$500E:500F	X = $4D65
ldaa $500e	Extended	$500E	A = $4D
Assume X=$5000 ldaa 7,x	Indexed	$5007	A = $02
Assume X=$5000 ldaa 1,x+	Indexex, auto post increment	$5000	A = 0 X = $5001

2. For each of the additions performed by the HC12 shown below, give the result (either in binary or hex) and give the states of the NZVC CCR bits. (10 points)

$23 + $81

Result:__$A4_____ N=__1_ Z=_0__ V=_0___ C=_0___

$A4 + $F6

Result:__$9A_____ N=__1_ Z=__0_ V=_0___ C=_1___

3. For each of the hex numbers given, give the decimal equivalent if the information has been encoded using unsigned, two's-complement, and signed/magnitude binary codes. (6 points)

Number	Unsigned Binary	Two's-Complement	Signed/Magnitude
$A4	164	-92	-36
$F6	246	-10	-118

4. Encode the following decimal information using unsigned, two's-complement, and signed/magnitude codes. (6 points)

Decimal Information	Unsigned Binary	Two's-complement	Signed/magnitude
+8.625	1000.101	01000.101	0100.101
-10.375	Impossible	10101.101	11010.011

5. What Dbug-12 monitor command is used for: (3 points)

   Displaying memory? MD <adr1> <adr2>

   Displaying registers? RD

   Assembling a program at $4000? ASM 4000

6. What happens to the NZVC bits in the condition code register when the HC12 executes each of the following instructions: (5 points)

	N	Z	V	C
DECB	)	)	)	-
DEX	-	)	-	-