

COE 205 : Computer Organization & Assembly Language
Quiz 1 – Sunday, October 2, 2004

Name:

ID:

Q1. (4 pts) Briefly answer the following:

i. What is the instruction set architecture (ISA) of a computer?

ii. Give two advantages for programming in assembly language:

Q2. (3 pts) Represent the signed number -96 in sign-magnitude, 1's complement, and 2's complement representations using 8 bits.

Q3. (2 pts) Find the decimal value of the following numbers:

i. $(7B.6)_{16}$

ii. $(1101.0101)_2$

- Q4.** (3 pts) Determine in both binary and decimal the range of values that can be represented in 10 bits for each of the following representations:
- unsigned representation
 - sign-magnitude representation
 - 2's complement representation

- Q5.** (2 pts) Assuming even parity show the 8-bit representation for each of the following ASCII characters, where the parity bit is the most significant bit: (Note that the ASCII code of character 'A' is 41H and that of character '0' is 30H)

'D':

'3':

- Q6.** (6 pts) Show the following additions in binary assuming 8-bit 2's complement representation and indicate whether there is a carry and/or an overflow.

i. $(11111111)_2 + (10000001)_2$

ii. $(01111111)_2 + (00000001)_2$

iii. $(11111111)_2 + (01111111)_2$