

Name:

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COE 205, Term 082
Computer Organization & Assembly Programming

Quiz# 2

Date: Monday, March 23, 2009

Q1. Consider an 8-bit register that has the binary number 10010110. Determine the decimal value of the number if it represents:

- (i) An unsigned number.

- (ii) A signed number in 2's complement representation.

Q2. Perform the following arithmetic operations assuming that numbers are represented using **8-bit 2's complement** representation. Indicate in your answer when an overflow occurs.

- (i) $CB + CA$

(ii) 68 – E0

Q3. Fill the blanks in the following questions:

- (i) Assuming **unsigned** number representation, the hexadecimal number **(8F)₁₆** represents the decimal number _____.
- (ii) The decimal number **120** is represented in binary as _____.
- (iii) The binary number **11000111** represents character __ and uses an _____ parity bit. Note that the ASCII code of character **A** is 41H and that of character **a** is 61H.
- (iv) Assuming **8-bit 2's complement** representation, the smallest (negative) number is _____ in binary and _____ in decimal and the largest (positive) number is _____ in binary and _____ in decimal.