Name: KEY **Id#**

COE 205, Term 051

Computer Organization & Assembly Programming

Quiz# 2

Date: Saturday, Oct. 1, 2005

Q1. Represent the numbers given below in **Hexadecimal** in the format specified in the table assuming **8-bits**:

Number	Sign-Magnitude	1's Complement	2's Complement
+27	1B	1B	1B
+101	65	65	65
-27	9B	E4	E5
-101	E5	9A	9B

Q2. Determine the range of numbers in both binary and decimal that can be represented assuming **8-bit 2's complement representation.**

Binary: 10000000 to 01111111
Decimal: -128 to +127

Q3. Using the 2's complement Hexadecimal representation obtained in Q1, perform the following operations and indicate if an overflow occurs or not:

i. (-101) + (-27) = 9B + E5

```
    9 B
+   E 5
-------
  8 0 (-128)
```

There is **no overflow** as the result is correct. Note that the sign of the result is the same as the sign of the two operands.

ii. (101) - (-27) = 65 – E5 = 65 + 1B

```
    6 5
+   1 B
-------
  8 0 (-128)
```

There is **overflow** as the result is incorrect. Note that the sign of the result is **NOT** the same as the sign of the two operands.

Q4. Determine in binary the ASCII representation of the string **COE205** assuming **Odd Parity**. Note that the ASCII code of character A is 41H and that of character 0 is 30H.

C	O	E	2	0	5
01000011	01001111	00100101	00110010	10110000	10110101