Name: **Id#**

COE 301/ICS 233, Term 151

Computer Architecture & Assembly Language

Quiz# 1

Date: Sunday, Sep. 6, 2015

Q1. Fill the blanks in the following questions:

1. Assuming **5-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**.**

2. Consider an **8-bit** register that has the binary number 11010100. The decimal value of this number as a signed number in sign-magnitude representation is _____ while in 1's complement representation it is _____ and in 2's complement representation it is _____.

3. Assuming **8-bit 2`s complement** representation, the hexadecimal number F4 represents the decimal number _____.

4. The binary number 11000100 represents character _____, and uses an _____ parity bit. Note that the ASCII code of character **A** is 41H and that of character **a** is 61H.

5. The need for a memory hierarchy is due to _____.

6. _____ is a register that holds the address of the next instruction to be fetched from memory.

7. The _____is considered as an interface between software and hardware and consists of _____, _____ and _____.

8. Given a magnetic disk with the following properties:

   - Rotation speed = 7200 RPM (rotations per minute)
   - Average seek = 8 ms, Sector = 512 bytes, Track = 200 sectors

   The average time to access a block of 100 consecutive sectors is _____ ms.

9. Two main advantages of programming in high-level language are: _____ and _____.

10. Two main advantages of programming in assembly language are: _____ and _____.