

Name:

Id#

COE 301/ICS 233, Term 161

Computer Architecture & Assembly Language

Quiz# 1

Date: Tuesday, Oct. 11, 2016

Q1. Fill the blanks in the following questions:

- (1) Assuming 12-bit unsigned representation, the binary number 1111 0000 1111 is equal to the decimal number _____.

- (2) Assuming 12-bit signed 2's complement representation, the hexadecimal number FC0 is equal to the decimal number _____.

- (3) _____ is a register that holds the address of the next instruction to be fetched from memory.

- (4) Two main advantages of programming in high-level language are: _____ and _____.

- (5) Two main advantages of programming in assembly language are: _____ and _____.

- (6) With a 36-bit address bus and 64-bit data bus, the maximum memory size (assuming byte addressable memory) that can be accessed by a processor is _____ and the maximum number of bytes that can be read or written in a single cycle is _____.

(7) The bandwidth mismatch between the speed of processor and the speed of main-memory is alleviated by using _____.

(8) The advantage of dynamic RAM over static RAM is that it is _____ and _____ but the disadvantage is _____.

(9) The instruction set architecture of a processor consists of _____
_____.

(10) Assuming that the CPU has just read a 32-bit MIPS instruction from the address 0x00400008, then, the address of the next instruction that this CPU is going to read is _____.

(11) Given a magnetic disk with the following properties:

- Time of one rotation is 8 ms
- Average seek = 8 ms, Sector = 512 bytes, Track = 200 sectors

The average time to access a block of 20 consecutive sectors is _____ ms.