Name: Id#

COE 301/ICS 233, Term 171

Computer Architecture & Assembly Language

Quiz# 1

 Date: Thursday, Oct. 5, 2017

# **Q1.** Fill the blanks in the following questions:

## Assuming 8-bit unsigned representation, the hexadecimal number 3A is equal to the decimal number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Assuming 16-bit signed 2`s complement representation, the hexadecimal number FE00 is equal to the decimal number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## The instruction pointer is a register that holds the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Program portability is an advantage of programming in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ language.

## Having faster executing programs is an advantage of programming in \_\_\_\_\_\_\_\_\_\_\_\_\_ language.

## With a 24-bit address bus and 128-bit data bus, the maximum memory size (assuming byte addressable memory) that can be accessed by a processor is \_\_\_\_\_\_\_\_\_\_\_ Byte and the maximum number of bytes that can be read or written in a single cycle is \_\_\_\_\_\_\_\_\_\_\_\_.

## A typical memory hierarchy is composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Dynamic RAM is slower than static RAM because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Assuming that the CPU has just read a 32-bit MIPS instruction from the address 0x004001FC, then, the address of the next instruction that this CPU is going to read is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## Given a magnetic disk with the following properties:

* Rotation speed is 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.

## Thebinary number 1110 0111 represents character \_\_\_\_\_\_\_\_\_\_\_\_\_,and uses an \_\_\_\_\_\_\_\_\_\_\_ parity bit. Note that the ASCII code of character **A** is 41H and that of character **a** is 61H.