Quiz 2

(20 points)

BASICS OF COMPUTING
(CSCE 101, SPRING 2007)
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Name   :
Course No   :   **CSCE101**

1   Part I: Matching and Multiple Choice

1. (10 points) Match each statement in the left column with the appropriate term in the right column.

    _____ Processor component that executes logical and arithmetic operations.

    _____ Processor component that includes the instruction register and the program counter.

    _____ Processor component that contains registers for storing values that are being manipulated.

    _____ Processor component that manages the flow of information through the processor.

    _____ The processor design philosophy that favors a large number of complex instructions.

    _____ The processor design philosophy that favors a small number of simple instructions.

    _____ The type of memory that is located on or near the processor for quick access to frequently used information.

    _____ Holds the memory address of the next instruction that the processor will execute.

    _____ Holds the current instruction that the processor is executing.

    _____ Another name for a processor.

    A. RISC

    B. Special purpose registers

    C. One-bit half adder

    D. Cache

    E. ALG

    F. CD

    G. PC

    H. CPU

    I. CISC

    J. Control Unit

    K. ALU

    L. General purpose registers

    M. IR

2. (2 points) The program counter is updated during the:

    (a) Fetch step

    (b) Decode step

    (c) Execute step

2   Part II: Short Answer

3. (3 points)Name the three different instruction types, and give an example of each type:

4. (2 points) Given the 8-bit floating point number 00101101, extract the mantissa by placing 0s in the exponent and sign bits, but leaving the mantissa undisturbed. Write down the mask that you would use, as well as performing the correct operation using the mask.

5. (3 points) What is the result of each of the following shifts:

   (a) A right circular shift of 3 bits on the bit pattern 00110110

   (b) A right arithmetic shift of 1 bit on the bit pattern 1010100

   (c) A right logical shift of 3 bits on the bit pattern 01010010