 Name: _____

ACTIVITY 3

MICROCOMPUTER DESIGN (FROM ASSIGNED READING - §2.1)

address bus - ALU - bus - clock - control bus - control unit
CPU - data bus - memory storage unit - register

1. The _____ pulses at a constant rate and is used to synchronize the internal operations of the CPU with other system components.*
2. The _____ contains circuitry to carry out the instructions of a computer program, performing basic arithmetic, logical, and input/output operations of the system.† It contains following components:
   a. The _____ contains circuitry to perform arithmetic operations (addition, subtraction, multiplication, division), comparisons (e.g., less than), and logical operations such as AND, OR, and NOT.*°
   b. The _____ contains circuitry to fetch an instruction, decode it, and direct the ALU to carry out the desired operation.*※
   c. _____s are memory locations located inside the CPU that hold intermediate values during computations and can be accessed at a much higher speed than both cache memory and conventional memory (RAM).*
3. A _____ is a group of parallel wires that transfer data from one part of the computer to another.*
4. To read data from memory (RAM), the CPU performs the following steps in order:*
   a. The address of the memory operand is placed on the _____bus.
   b. The control unit signals the _____ that a read operation should be performed.
   c. The memory storage unit reads the data from memory, and then it places the data on the _____bus.
   d. The control unit reads the data from the bus and stores it in an internal register.

MORE TERMINOLOGY (EASY TO GUESS)

integrated circuit - microprocessor

5. An _____ (also referred to as a *chip* or a *microchip*) is a set of electronic circuits on one small plate of semiconductor material, normally silicon.†
6. An integrated circuit that contains all (or most) of the functions of a computer's central processing unit (CPU) is called a _____.‡

*Sources: †Wikipedia ‡Wiktionary *Textbook (Irvine 6/e) ※http://www.pcguide.com/ref/cpu/arch/int/compControl-c.html °http://courses.cs.vt.edu/csonline/MachineArchitecture/Lessons/CPU/Lesson.html*