

# ICS Assignment 4

Name: \_\_\_\_\_ ID: \_\_\_\_\_

- ( ) The data in \_\_\_\_\_ is erased if the computer is powered down.  
(A) a tape drive (B) ROM (C) a CD-ROM (D) RAM
- ( ) A control unit with five wires can define up to \_\_\_\_\_ operations.  
(A) 10 (B) 5 (C) 32 (D) 16
- ( ) \_\_\_\_\_ is a stand-alone storage location that holds data temporarily.  
(A) A control unit (B) A register (C) An ALU (D) A tape drive
- ( ) The three steps in the running of a program on a computer are performed in the specific order \_\_\_\_\_.  
(A) fetch, decode and execute (B) execute, fetch and decode  
(C) decode, fetch and execute (D) decode, execute and fetch
- ( ) \_\_\_\_\_ can be programmed and erased using electronic impulses but can remain in a computer during erasure.  
(A) EPROM (B) ROM (C) EEPROM (D) PROM
- A computer has 64 MB (megabytes) of memory. Each word is 4 bytes. How many bits are needed to address each single word in memory?
- Compare and contrast the two methods for handling the addressing of I/O devices.
- A computer uses memory-mapped I/O addressing. The address bus uses ten lines (10 bits). If memory is made up of 1000 words, how many four-register controllers can be accessed by the computer?

9. An imaginary computer has 16 data registers (R0 to R15), 1024 words in memory, and 16 different instructions (add, subtract, and so on). What is the minimum size of an add instruction in bits if a typical instruction uses the following format: *add M R2*.

10. What is the minimum size of the control bus in the computer in problem 9?

11. Describe parallel processing and its purpose.