Computer Org	ganization
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- **1.** The von Neumann model of a computer consists of three major components: the central processing unit (CPU), main memory, and input-output. In which of these components might we find the 32 registers of a MIPS processor? A
- A. CPU
- B. Main memory
- C. Input-output
- D. CPU as well as main memory
- E. Main memory as well as input-output
- **2.** Suppose we want to put the 32-bit value 0x456789AB into register **\$4**. Which of the following is a good sequence of assembly instructions to do so?

A. addi \$4, \$0, 0x4567

sll \$4, \$4, 8

addi \$4, \$4, 0x89AB

B. addiu \$4, \$0, 0x4567

srl \$4, \$4, 8

addiu \$4, \$4, 0x89AB

C. lui \$4, 0x4567

addi \$4, \$4, 0x89AB

D. lui \$4, 0x4567

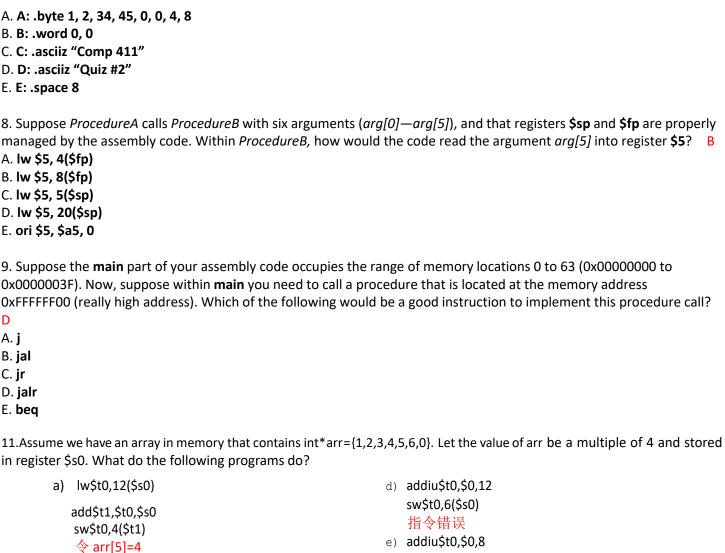
addiu \$4, \$4, 0x89AB

- E. All of the above
- **3.** Which of the following instructions, when encoded in binary, has a field that holds an immediate/constant value that is *NOT automatically multiplied by 4* during execution by the CPU: **F**
- A. lw \$4, 4(\$4)
- B. sll \$4, \$4, 2
- C. bne \$4, \$1, 0x0100
- D. jal 0x0100
- E. The lw, bne and jal instructions above
- F. The **lw** and **sll** instructions above
- 4. Which of the following CANNOT be compiled as a single valid MIPS instruction: B
- A. addu \$s6, \$s7, \$t8
- B. mul \$2, \$3, \$4
- C. lw \$2, -3(\$4)
- D. la \$2, -3(\$4)
- E. None of the above
- 5. If a is of type double* in C, and each double is 8 bytes long, then which of the following C Boolean expressions is

FALSE: D

A. a == &a[0]

- B. *(a+i) == a[i]
- C. &a[j] == a+j
- D. a[4] == *(a+32)
- E. None of the above
- 6. Which of the following addressing modes is available in MIPS? B
- A. Memory indirect
- B. Displacement
- C. Autoincrement
- D. Indexed
- E. Scaled
- 7. The following five assembly statements reserve space for five different variables/arrays, named A, B, C, D and E. Circle the one that reserves a different amount of space than the other four: C



指令错误

12. What are the instructions to branch to label: on each of the following conditions?

\$s0	<\$s1		\$s0 <=\$s	1	\$s0 >1	\$s0 >=1
slt	\$t0,	\$s0, \$s1	slt \$t0,	\$s1, \$s0	sltiu \$t0, \$s0, 2 beq\$t0,\$0,	bgtz\$s0,label
bne	\$t0,	\$0, label	beq \$t0,	\$0, label	label	

