Created 6/26/03; replaced question 7 (thanks to Z. Li) 05/22/11; 07/07/15

on Set Instructions

Instructions: For each question, choose the single best answer. Make your choice by clicking on its button. You can change your answers at any time. When the quiz is graded, the correct answers will appear in the box after each question.

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1. Examine the following program fragment:

```
          ori   $8,$0,13
          ori   $9,$0,1
          bltz  $8,target
          sll   $0,$0,0
          ori   $9,$0,0

target:   sll   $0,$0,0       # arbitrary instruction
```

What value is found in $9 when control reaches *target*?

- (●) **A.** 0
- ( ) **B.** 1
- ( ) **C.** 4
- ( ) **D.** 13

A

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2. **Trick Question:** Examine the following program fragment:

```
          ori   $8,$0,-57
          ori   $9,$0,1
          bltz  $8,target
          ori   $9,$0,0       # think about the delay
                              # slot
target:   sll   $0,$0,0       # arbitrary instruction
```

What value is found in $9 when control reaches *target*?

- (●) **A.** 0
- ( ) **B.** 1
- ( ) **C.** 3
- ( ) **D.** 4

A

---

3. Examine the following program fragment:

```
          ori   $8,$0,13
          ori   $9,$0,1
          bgez  $8,target
          sll   $0,$0,0
          ori   $9,$0,0

target:   sll   $0,$0,0       # arbitrary instruction
```

What value is found in $9 when control reaches *target*?

- ( ) **A.** 0
- (●) **B.** 1
- ( ) **C.** 4
- ( ) **D.** 13

B

---

4. Examine the following program fragment (slightly different from the previous):

```
          ori   $8,$0,13
          bgez  $8,target
          ori   $9,$0,1
          ori   $9,$0,0

target:   sll   $0,$0,0       # arbitrary instruction
```

What value is found in $9 when control reaches *target*?

- **A.** 0
- **B.** 1
- **C.** 4
- **D.** 13

B

---

5. Examine the following program fragment:

```
addiu    $3,$0,-13
addiu    $7,$0,23
?????
```

Pick the instruction to replace `?????` that will set register $10 to one.

- **A.** `sltu $3,$7,$10`
- **B.** `slt $10,$7,$3`
- **C.** `slt $10,$3,$7`
- **D.** `sltu $10,$3,$7`

C

---

6. Examine the following program fragment:

```
addiu    $3,$0,-13
slti     $5,$3,-8
```

What value is in $5 after both instructions exectute?

- **A.** 0
- **B.** 1
- **C.** -8
- **D.** -13

B

---

7. Examine the following program fragment:

```
ori     $3,$0,25
slti    $5,$3,53
```

What value is in $5 after both instructions exectute?

- **A.** 0
- **B.** 1
- **C.** 25
- **D.** 53

B

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8. (**Very Tricky:**) Examine the following program fragment:

```
addiu   $3,$0,-1
slti    $5,$3,17
```

What value is in $5 after both instructions exectute? (If your answer is incorrect, run the program with SPIM and examine the registers. SPIM does not "know" how the bit pattern got into $3, it's just a pattern and the slti instruction acts on it mechanically.)

- **A.** 0
- **B.** 1
- **C.** -8
- **D.** -13

A

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9. Which style of implementing a counting loop is usually easiest to understand?

- **A.** data driven loop
- **B.** bottom driven loop

- **C.** conditional driven
- **D.** top driven loop

D

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10. Examine the following program fragment:

```
        ori     $5,$0,5         # initialize count
        ori     $8,$0,0         # initialize accumulator

test:   bltz    $5,done
        sll     $0,$0,0
        addu    $8,$8,$5        # add count to accumulator
        addiu   $5,$5,-1
        j       test
        sll     $0,$0,0

done:   sll     $0,$0,0
```

How many times is the `addu` instruction executed?

- **A.** 0
- **B.** 5
- **C.** 6
- **D.** 7

C

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grade quiz The number you got right: 10 Percent Correct: 100 Letter Grade: A

If you have returned here from another page, or have re-loaded this page, you will need to click again on each of your choices for the grading program to work correctly. You may want to press the SHIFT KEY while clicking to clear the old answers.