



Quiz 2

Name: \_\_\_\_\_ *Solution* \_\_\_\_\_

Duration: 10 minutes.

Instructions: - *No questions allowed.*

-*Show your work.*

**Question 1:**

**(6 Points)**

The variables {f, g, h, i, j} are stored in register X19-X23. Array B is a word sized array, the base address for array B is stored in X25.

What does each of the following code segments do? Each one is independent of the previous code.

1. add X21, X20, X20

$$h = g + g = 2 * g$$

2. lw X20, 16(X25)

$$g = B[4]$$

3. sw X21, 24(X25)

$$B[6] = h$$

4. lw X5, 32(X25)

$$X5 = B[8]$$

addi X25, X25, 8

$$X25 = \&B[2]$$

lw X6, 24(X25)

$$X6 = B[8]$$

add X20, X5, X6

$$g = 2 * B[8]$$

**Question 2:**

**(2 Points)**

The following registers contain these values:

X9 = 0x0000 0000 F0F0 F0F0

X10 = 0x0000 0000 0F0F 0F0F

X11 = 0x0000 0000 abcd 1234

What is the content in X1 (in Hex) after executing the following:

xor X1, X9, X10

$$X1 = 0x 0000 0000 FFFF FFFF$$

and X1, X9, X11

$$X1 = 0x 0000 0000 a0c0 1030$$

**Question 3:**

**(2 Points)**

What is the format type of the following instructions?

lw X1, 24(X2)

*I -Type*

xori X1, X9, 10

*I -Type*



Quiz 2

Name: \_\_\_\_\_ *Solution* \_\_\_\_\_

Duration: 10 minutes.

Instructions: - *No questions allowed.*

-*Show your work.*

**Question 1:**

**(6 Points)**

The variables (f, g, h, i, j) are stored in register X19-X23. Array B is a word sized array, the base address for array B is stored in X25.

What does each of the following code segments do? Each one is independent of the previous code.

1. add X21, X23, X23

$$h = j + j = 2*j$$

2. lw X19, 32(X25)

$$f = B[B]$$

3. sw X20, 8 (X25)

$$B[2] = g$$

4. lw X5, 24(X25)

$$X5 = B[6]$$

addi X25, X25, 16

$$X25 = \&B[4]$$

lw X6, 32(X25)

$$X6 = B[12]$$

add X20, X5, X6

$$g = B[6] + B[12]$$

**Question 2:**

**(2 Points)**

The following registers contain these values:

X9 = 0x0000 0000 0F0F 0F0F

X10 = 0x0000 0000 F0F0 F0F0

X11 = 0x0000 0000 1234 abcd

What is the content in X1 (in Hex) after executing the following:

xor X1, X10, X9

$$X1 = 0x0000\ 0000\ FFFF\ FFFF$$

and X1, X9, X11

$$X1 = 0x0000\ 0000\ 0204\ 0b0d$$

**Question 3:**

**(2 Points)**

What is the format type of the following instructions?

sw X1, 24(X2)

*S-Type*

xor X1, X9, 10

*R-Type*