



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



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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 = 0x 0000 0000 FFFF FFFF

and X1, X9, X11

X1 = 0x 0000 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