Quiz 2

Answer the 5 questions below. They all carry 1 mark.

Numerical Input

1.0/1.0 point (graded)

Suppose we have a binary number = $0.0001010 * 2^6$. What should be the power of 2 if we normalize the given number? Write the decimal answer.

2 ✔

2

Submit You have used 2 of 2 attempts

Numerical Input

1.0/1.0 point (graded)

Suppose in a 20-bit register system, the binary encoded floating point numbers use 10 bits for storing fractions and 1-bit for sign.

In this system, what would be the bias term in decimal?

255 ✔

255

Answer
Correct: Use the formula of bias for n-bit bias size: 2^(n-1)-1

Submit You have used 2 of 2 attempts

Multiple Choice

1.0/1.0 point (graded)

Suppose you have implemented the following pseudocode in Fortran:

```
int q = 15; //line #1

int p = 13; //line #2

x = y + 10; //line #3
```

When the line #3 gets compiled into MIPS, which of the following instructions will be used by the compiler?

- ◯ addiu
- ◯ addu
- ◉ addi
- ◯ addui

✔

Submit You have used 1 of 1 attempt

Multiple Choice

1.0/1.0 point (graded)

In a 4-bit architecture where registers are of size 4, if we Subtract 1111 from 0011, Will there be an overflow? Consider both numbers as 4-bit Signed Binary Numbers.

- ◯ Yes
- ◉ No

✔

Submit You have used 1 of 1 attempt

Multiple Choice

1.0/1.0 point (graded)

Which of the following instruction moves the contents of floating point registers (coprocessor) to integer register file?

- (●) mfc1
- ( ) mtc1
- ( ) lwc1
- ( ) swc1
- ( ) mflo

✔

Submit You have used 1 of 1 attempt

The following question has 5 parts. Each part carries 2 Marks. You can press the submit button maximum 2 times (Number of attempts: 2)

Numerical Input

10.0/10.0 points (graded)

In the given table, we are multiplying 1100 by 1010 with the regular **long-multiplication hardware**, where the Multiplicand and the product are stored in two seperate 8-bit registers, and the multiplier is stored in a 4-bit register. You need to complete the table and input the values, that are marked in the table, in the given input fields below.

Iteration	Multiplier	Multiplicand	Product
0	1010	00001100	00000000
1			
			(a)
2			
			(b)
		(c)	
3			
			(d)
4			
_			
			(e)

What is the value of (a)?
Give the answer in 8-bit binary.

00000000 ✔

What is the value of (b)?
Give the answer in 8-bit binary.

00011000 ✔

What is the value of (c)?
Give the answer in 8-bit binary.

00110000 ✔

What is the value of (d)?
Give the answer in 8-bit binary.

00011000 ✔

What is the value of (e)?
Give the answer in 8-bit binary.

01111000 ✔

Submit You have used 2 of 2 attempts