Name: Id#

COE 301/ICS 233, Term 171

Computer Architecture & Assembly Language

Quiz# 3

 Date: Tuesday, Nov. 7, 2017

## **Q1. [4 Points]** Given that **Multiplicand=1001** and **Multiplier=1011** are signed 2’s complement numbers, show the **signed** multiplication of **Multiplicand** by **Multiplier**. The result of the multiplication should be an 8-bit **signed** number in HI and LO registers. Show the steps of your work.

|  |  |  |  |
| --- | --- | --- | --- |
|  **Iteration** | **Multiplicand** | **Sign** | **Product = HI,LO** |
| 0 | Initialize |  |  |  |
| 1 |  |  |  |  |
|  |  |  |  |
| 2 |  |  |  |  |
|  |  |  |  |
| 3 |  |  |  |  |
|  |  |  |  |
| 4 |  |  |  |  |
|  |  |  |  |

## **Q2. [6 Points]** Given that **Dividend=0111** and **Divisor=1101** are signed 2’s complement numbers, show the **signed** division of **Dividend** by **Divisor**. The result of division should be stored in the Remainder and Quotient registers. Show the steps of your work, and show the final result.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Iteration** | **Remainder (HI)** | **Quotient (LO)** | **Divisor** | **Difference** |
| 0 | Initialize |  |  |  |  |
| 1 |  |  |  |  |  |
|  |  |  |  |  |
| 2 |  |  |  |  |  |
|  |  |  |  |  |
| 3 |  |  |  |  |  |
|  |  |  |  |  |
| 4 |  |  |  |  |  |
|  |  |  |  |  |

**Quotient =**  **Remainder =**