**Q1:** Do the following addition and subtraction by hand:

$76 + $3A If these numbers are unsigned numbers, **overflow:** yes no

If these numbers are signed numbers, **overflow**: yes no

$A3-$6C If these numbers are unsigned numbers, **overflow:** yes no

If these numbers are signed numbers, **overflow**: yes no

**Q2:** Do your results calculated by hand in Q1 match the simulation results? Yes No

**Q3:** Do the following addition and subtraction by hand:

$F3 + $C9 If these numbers are unsigned numbers, **overflow:** yes no

If these numbers are signed numbers, **overflow**: yes no

$4B-$8D If these numbers are unsigned numbers, **overflow:** yes no

If these numbers are signed numbers, **overflow**: yes no

**Q4:** Do your results calculated by hand in Q3 match the simulation results with the new data?

Yes No

Using **F11 key, execute** the instructions one at a time and fill the values of **N, Z, V, and C bits in Condition Coder Register (CCR)**.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Code Line** | **Memory Address** | **Machine Codes** | **Assembly Code** | **N** | **Z** | **V** | **C** |
| 1: | $4100 | B6 | LDAA 3000h |  |  |  |  |
| $4101 | 30 |
| $4102 | 00 |
| 2: | $4103 | F6 | LDAB 3001h |  |  |  |  |
| $4104 | 30 |
| $4105 | 01 |
| 3: | $4106 | 18 | ABA |  |  |  |  |
| $4107 | 06 |
| 4: | $4108 | 7A | STAA 3002h |  |  |  |  |
| $4109 | 30 |
| $410A | 02 |
| 5: | $410B | B6 | LDAA 3003h |  |  |  |  |
| $410C | 30 |
| $410D | 03 |
| 6: | $410E | F6 | LDAB 3004h |  |  |  |  |
| $410F | 30 |
| $4110 | 04 |
| 7: | $4111 | 18 | SBA |  |  |  |  |
| $4112 | 16 |
|  | $4113 | 7A | STAA 3005h |  |  |  |  |
| $4114 | 30 |
| $4115 | 05 |
| 6: | $4116 | 20 | BRA endmain |  |  |  |  |
| $4117 | FE |

Figure 9.