ICS Hw 1

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1.2 1.4 1.10 1.16 1.18 2.4 2.8 2.17 2.20 2.34

1.2

No.

1.4

Ambiguity.

1.10

Definiteness: it is precisely stated.

Effective Computability: each step can be carried out by a computer.

Finiteness: the procedure terminates in finite time.

1.16

- Addressing modes
- Data types
- Operations

1.18

One for one;

Many for a single ISA.

2.4

2^n

0 to $2^n - 1$

2.8

1. 0111 1111; 127
2. 1111 1110; -128
3. $2^n - 1$
4. -2^n

2.17

1. 1100; 12
2. 0101 1000; 88
3. 1011; 11
4. 11; 3

2.20

1. No. $1100 + 0011 = (1111)_2 = -1$
2. No. $1100 + 0100 = (0000)_2 = 0$
3. Yes. $0111 + 0001 \neq (1000)_2 = -8$
4. Yes. $1000 - 0001 \neq (0111)_2 = 7$ (It's underflow)
5. No. $0111 + 1001 = (0000)_2 = 0$.

2.34

1. NOT(1011) OR NOT(1100)=0111
2. NOT(1000 AND (1100 OR 0101))=0111
3. NOT(NOT(1101))=1101
4. (0110 OR 0000) AND 1111=0110