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1.2

(1) $(1101011)_2 = 1\times2^6+1\times2^5+1\times2^3+1\times2^1+1\times2^0 = 107$

(2) $(121.01)_3 = 1\times3^2+2\times3^1+1\times3^0+0\times3^{-1}+1\times3^{-2} = 16.111$

(3) $(123.4)_5 = 1\times5^2+2\times5^1+3\times5^0+4\times5^{-1} = 38.8$

(4) $(67.24)_8 = 6\times8^1+7\times8^0+2\times8^{-1}+4\times8^{-2} = 55.3125$

(5) $(2014.8)_9 = 2\times9^3+0+1\times9^1+4\times9^0+8\times9^{-1} = 1471.889$

(6) $(15C.38)_{16} = 1\times16^2+5\times16+12\times16^0+3\times16^{-1}+8\times16^{-2} = 348.21875$

1.3.

(2) 73.4 $73 = (1001001)_B$ $0.4 = (0.0110)_B$ 则 $73.4 = (1001001.0110)_B$

$73 = (111)_O$ $0.4 = (0.3146)_O$ $73.4 = (111.3146)_O$

$73 = (49)_H$ $0.4 = (0.6666)_H$ $73.4 = (49.6666)_H$

(3) 2014.8 $2014 = (11111011110)_B$ $0.8 = (0.1100)_B$ $2014.8 = (11111011110.1100)_B$

$2014 = (3736)_O$ $0.8 = (0.6314)_O$ $2014.8 = (3736.6314)_O$

$2014 = (7DE)_H$ $0.8 = (0.CCCC)_H$ $2014.8 = (7DE.CCCC)_H$

1.7

(1) +1111 原码: 01111 反码: 01111 补码: 01111

(2) -1111 原码: 11111 反码: 10000 补码: 10001

(3) +0000 原码: 00000 反码: 00000 补码: 00000

(4) -0000 原码: 10000 反码: 11111 补码 00000

(5) +1010 原码: 01010 反码: 01010 补码 01010

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16) -1010. 原码: 11010 反码: 10101 补码: 10110.

1.10

11) $\frac{11}{64} = 0.171875 = 0.0001011$.

∴原码 00001011O 反码: 00001011O 补码 00001011O

(2) $\frac{13}{128} = 0.1015625 = 0.0001101$

原码 00001101O 反码 00001101O 补码 00001101O

(3) $-\frac{15}{256} = -0.05859375 = -0.00001111$

∴原码: 10000111 反码 11111000 补码 11111001

1.12.

$(1010111.01110101)_{BCD} = (57.75)_{10} = (10001010.10101000)_{余3码}$

$= (10111101.11011011)_{2421} = (111001.11)_2 = (100101.00)_{Gray}$

1.14 海明码 0 1 0 0 1 0 1

$B_4\ B_3\ B_2\ P_3\ B_1\ P_2\ P_1$

1111 1010 1100 0110 0101 0011 0001

$S_3 = B_4 \oplus B_3 \oplus B_2 \oplus P_3 = 1$

$S_2 = B_4 \oplus B_3 \oplus B_1 \oplus P_2 = 0$

$S_1 = B_4 \oplus B_2 \oplus B_1 \oplus P_1 = 0$ ∵ $S_3=1$ ∴不正确.

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1.1]

(1) $F = AB + (\bar{A}+B)(C+D+E)$ $\quad \bar{F} = (\bar{A}+\bar{B})(\bar{A}\bar{B} + \bar{C}\bar{D}\bar{E})$

對偶 $F' = (A+B)(\bar{A}B + CDE)$

(2) $F = (A+B\bar{C})(\bar{A}+\bar{D}E)$ $\quad \bar{F} = \bar{A}(\bar{B}+C) + A(D+\bar{E})$

對偶 $F' = A(B+\bar{C}) + \bar{A}(\bar{D}+E)$