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Assignment number: 1

q1. Convert - - - system.

$$1. (EB4A)_{16} = (?)_{10}$$

$$= (EB4A)_{16}$$

$$= (1110\ 1011\ 0100\ 1010)_2$$

$$= \cancel{1 \times 16}$$

$$= 1 \times 2^{15} + 1 \times 2^{14} + 1 \times 2^{13} + 0 \times 2^{12} +$$

$$1 \times 2^{11} + 0 \times 2^{10} + 1 \times 2^9 + 1 \times 2^8 +$$

$$0 \times 2^7 + 1 \times 2^6 + 0 \times 2^5 + 0 \times 2^4 +$$

$$1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 0 \times 2^0$$

$$= 2^{15} + 2^{14} + 2^{13} + 0 + 2^{11} + 2^{10} +$$

$$2^9 + 2^8 + 0 + 2^6 + 0 + 0 +$$

$$2^3 + 0 + 2 + 0$$

$$= \cancel{32768}$$

$$= 2^{15} + 2^{14} + 2^{13} + 2^{11} + 2^{10} +$$

$$2^9 + 2^8 + 2^6 + 2^3 + 2$$

$$= 32768 + 16384 + 8192 +$$

$$2048 + 512 + 256 + 64 +$$

$$8 + 2$$

$$= 49152 + 10240 + 768 + 74$$

$$= 59392 + 842$$

$$= (60234)_{10}$$

2. $(84)_{10} = (?)_2$

2	84	
2	42	0
2	21	0
2	10	1
2	5	0
2	2	1
	1	0

$$(84)_{10} = (1010100)_2$$

3. $(B2F)_{16} = (?)_8$

$$= (B2F)_{16}$$

$$= (1011\ 0010\ 1111)_2$$

$$= (5457)_8$$

4. $(2C9)_{16} = (?)_2$

$$= (2C9)_{16}$$

$$= (1011001001)_2$$

5. $(101010)_2 = (?)_{16}$

$$= (101010)_2$$

$$= (0010\ 1010)_2$$

$$= (2A)_{16}$$

$$6. \quad (3674)_8 = (?)_{16}$$

$$= (3674)_8$$

$$= (01110111100)_2$$

$$= (7BC)_{16}$$

$$7. \quad (1100101)_2 = (?)_8$$

$$= (1100101)_2$$

$$= (001100101)_2$$

$$= (145)_8$$

Q 2. Convert - - - form.

1. 22

Binary: $(00010110)_2 \Rightarrow (10110)_2$

1's: 00010110

2's: 00010110

2. -12

Binary: $(00001100)_2 \Rightarrow (1100)_2$

1's: 11110011

2's: 11110100

3. 64

Binary: $(01000000)_2 \Rightarrow (1000000)_2$

1's: 01000000

2's: 01000000

4. -63

Binary: $(00111111)_2 \Rightarrow (111111)_2$

1's: 11000000

2's: 11000001

5. 255

Binary: $(11111111)_2$

1's: 11111111 ; 2's: 11111111