

2-8 Hex. Numbers

Q18 Q1-2

37) 38_{16} b) 59_{16} c) $A14_{16}$ d) $5C8_{16}$
 $\begin{array}{r} 0010 \\ \quad \uparrow \\ 101000 \end{array}$ $\begin{array}{r} 0101 \\ \quad \uparrow \\ 101101 \end{array}$ $\boxed{101000010100}$ $\boxed{010111001000}$
e) 4100_{16} f) $F317_{16}$ g) $8A9D_{16}$
 $\boxed{0100000100000000}$ $\boxed{1111101100010111}$ $\boxed{1000101010011101}$

39) 23_{16} b) 92_{16} c) $1A_{16}$ d) $8D_{16}$
 $3 = 3 \cdot 16^0 = 3$ $2 \cdot 16^0 = 2$ $A = 10 \cdot 16^0 = 160$ $D = 13 \cdot 16^0 = 13$
 $2 = 2 \cdot 16^1 = 32$ $9 \cdot 16^1 = 144$ $1 = 1 \cdot 16^1 = 16$ $8 = 8 \cdot 16^1 = 128$
 $\boxed{=35}$ $\boxed{=146}$ $\boxed{=176}$ $\boxed{=141}$

e) $F3_{16}$ f) EB_{16} g) $5C2_{16}$ h) 700_{16}
 $3 \cdot 16^0 = 3$ $B = 11 \cdot 16^0 = 11$ $2 \cdot 16^0 = 2$ $0 \cdot 16^0 = 0$
 $F = 15 \cdot 16^1 = 240$ $E = 14 \cdot 16^1 = 224$ $C = 12 \cdot 16^1 = 192$ $0 \cdot 16^1 = 0$
 $\boxed{=243}$ $\boxed{=235}$ $\boxed{=1474}$ $\boxed{=1792}$

40) a) 8 b) 14 c) $33/16$ d) $52/16$
 $\boxed{=8}$ $=\boxed{E}$ $2 \text{ R } 1 = 1$ $3 \text{ R } 4 = 4$
 $0 \text{ R } 2 = 2$ $0 \text{ R } 3 = 3$
 $\boxed{=21}$ $\boxed{=34}$

e) $284/16$ f) 2890 g) 4019 h) 6500
 $17 \text{ R } 12 = C$ $180 \text{ R } 10 = A$ $251 \text{ R } 3 = 3$ $406 \text{ R } 4 = 4$
 $1 \text{ R } 1 = 1$ $11 \text{ R } 4 = 4$ $15 \text{ R } 11 = B$ $25 \text{ R } 6 = 6$
 $0 \text{ R } 1 = 1$ $0 \text{ R } 11 = B$ $0 \text{ R } 15 = F$ $1 \text{ R } 9 = 9$
 $\boxed{11C}$ $\boxed{B4A}$ $\boxed{FB3}$ $\boxed{1964}$

2-10 BCD

50

- a) 0001 b) 0110 c) 1001 d) 00011000 = 18
= 1 = 6 = 9 1 8
- e) 00011001 f) 00110010 g) 01000101 h) 10010000
19 32 45 98

i) 100001110000 = 870
8 7 0

2-11 Digital Codes

56)

- a) 11011 b) 1001010 c) 111101110110
10110 1101111 1000110011001

57)

- a) 1010 b) 00010 c) 11000000001
1100 00011 1000001110

60

(60) $1001000 = H$ = Hello how are you?
 $1100101 = e$
 $1101100 = l$
 $1101100 = l$
 $1101111 = o$
 $0101110 = .$
 $0100000 = \text{Space}$
 $1001000 = H$
 $1101111 = o$
 $1110111 = w$
 $0100000 = \text{Space}$
 $1100001 = a$
 $1110010 = r$
 $1100101 = e$
 $0100000 = \text{Space}$
 $1111001 = y$
 $1101111 = o$
 $1110101 = ?$
 $0111111 = ?$

2-12 error Codes

(63)

a) 100110010

Correct, even # of 1's.

b) 011101010

Odd, so incorrect

c) 1011111010001010

Correct b/c even.