

Willis T. Allstead

Professor Egbert

CPE 301 section 1001

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HW 1

1.5 (a) $(01110101101000110011011110000)_2 \rightarrow (\quad)_{10}$

$= (1993448432)_{10}$

1.5) a) $(1993448432)_{10}$

(b) $(0111011011010001100110111110000)_2 \rightarrow (\quad)_{16}$

7 6 D 4 C B F 0

$= (76D19BF0)_{16}$

1.5) b) $(76D19BF0)_{16}$

1.6 (a) $(24687531)_{10} \rightarrow (\quad)_{16}$

$= (2 \times 16^7) + (4 \times 16^6) + (6 \times 16^5) + (8 \times 16^4) + (7 \times 16^3) + (5 \times 16^2) + (3 \times 16^1) + (1 \times 16^0)$

$= (610825521)_{10}$

(b)

2	4	6	8	7	5	3	1
0010	0100	0110	1000	0111	0101	0011	0001

$= (00100100011010000111010100110001)_2$

1.6) a) $(610825521)_{10}$

b) $(00100100011010000111010100110001)_2$

1.9 (a) not possible

(b) $10000100 \rightarrow 00000100$ signed = $(04)_{16}$

(c) BCD: $(-123) \rightarrow -(0001\ 0010\ 0011)_{BCD}$

(d) not possible

$154270/16 = 96435$	$10 = A$
$96435/16 = 6027$	$3 = 3$
$6027/16 = 376$	$11 = B$
$376/16 = 23$	$6 = 6$
$23/16 = 1$	$7 = 7$
$1/16 = 0$	1

$(176B3AB)_{16}$

$= (0001\ 0111\ 1000\ 1100\ 0011\ 1011\ 1100)_2$

1.7 a) $(178B3AB)_{10}$

b) $(00010111110001100001110111100)_2$

1.8 (a) $(123)_{10} \rightarrow (01111011)_2$

$123/2 = 61$	1
$61/2 = 30$	1
$30/2 = 15$	0
$15/2 = 7$	1
$7/2 = 3$	1
$3/2 = 1$	1
$1/2 = 0$	0

(a) (01111011) unsigned = $(7B)_{16}$

(b) 10000100
 $\xrightarrow{+1}$ signed = $(84)_{16}$

(c) $(123)_{10} \rightarrow (0001\ 0010\ 0011)_{BCD} = (123)_{16}$

(d) $(123)_{10} \rightarrow ASCII = \{$

1.8 a) $(01111011)_2$

b) $(10000100)_2$

c) $(000100100011)_{BCD}$

d) {

1.9 (a) not possible
 (b) $10000100 \rightarrow 00000100$ signed = $(04)_{16}$
 (c) BCD: $(-123) \rightarrow -(0001\ 0010\ 0011)_{BCD}$
 (d) not possible

1.9) a) not possible

b) $(00000100)_2$

c) $-(000100100011)_{BCD}$ or impossible

d) not possible

1.10 (a) not possible (too big)
 (b) not possible (too big)
 (c) $(56789)_{10} \rightarrow (0101\ 0110\ 0111\ 1000\ 1001)_{BCD}$
 (d) not possible (too big)

1.10) a) not possible

b) not possible

c) $(01010110011110001001)_{BCD}$

d) not possible