BIRZEIT UNIVERSITY

Department of Computer Science

COMP 1310
Introduction to Computing and Computer Ethics

Numbering Systems Worksheet #1

Part 1: Convert these numbers from Binary to Decimal

a. $(1100111)_2 = 1 \times 2^0 + 1 \times 2^1 + 1 \times 2^2 + 0 \times 2^3 + 0 \times 2^4 + 1 \times 2^5 + 1 \times 2^6$

$= 1 \times 1 + 1 \times 2 + 1 \times 4 + 0 \times 8 + 0 \times 16 + 1 \times 32 + 1 \times 64$

$= 1 + 2 + 4 + 32 + 64 = 103$

b. $(1011001)_2 = ($ $)_{10}$

c. $(101011)_2 = ($ $)_{10}$

d. $(10110111)_2 = ($ $)_{10}$

e. $(1010101)_2 = ($ $)_{10}$

Part 2: Convert these numbers from Decimal to Binary

a. $(37)_{10} = (100101)_2$

b. $(101)_{10} = ($ $)_2$

c. $(22)_{10} = ($ $)_2$

d. $(86)_{10} = ($ $)_2$

e. $(76)_{10} = ($ $)_2$

37	2
18	1
9	0
4	1
2	0
1	0
0	1

1 0 0 1 0 1

Part 3: Convert these numbers from Octal to Decimal

    a. $(71)_8$ = (   )$_{10}$

    b. $(200)_8$ = (   )$_{10}$

    c. $(1101)_8$ = (   )$_{10}$

    d. $(361)_8$ = (   )$_{10}$

    e. $(47)_8$ = (   )$_{10}$

Part 4: Convert these numbers from Decimal to Octal

    a. $(37)_{10}$ = (   )$_8$

    b. $(101)_{10}$ = (   )$_8$

    c. $(22)_{10}$ = (   )$_8$

    d. $(86)_{10}$ = (   )$_8$

    e. $(76)_{10}$ = (   )$_8$

Part 5: Convert these numbers from Hexadecimal to Decimal

    a. $(99)_{16}$ = (   )$_{10}$

    b. $(6AE)_{16}$ = (   )$_{10}$

    c. $(7C)_{16}$ = (   )$_{10}$

    d. $(210)_{16}$ = (   )$_{10}$

    e. $(10101)_{16}$ = (   )$_{10}$

Part 4: Convert these numbers from Decimal to Hexadecimal

a. $(37)_{10} = ($ $)_{16}$

b. $(101)_{10} = ($ $)_{16}$

c. $(22)_{10} = ($ $)_{16}$

d. $(86)_{10} = ($ $)_{16}$

e. $(76)_{10} = ($ $)_{16}$