



Introduction to Computers CC111/CS111

Sheet 1

Numbering Systems

Answer all the following questions

DECIMAL NUMBERS

1. What is the weight of digit 6 in each of the following decimal numbers?
 - a. 1386
 - b. 54692
 - c. 671920
2. Express each of the following decimal numbers as a power of ten:
 - a. 10
 - b. 100
 - c. 1000000

BINARY NUMBERS

3. Convert the following binary numbers into decimal:
 - a. 11
 - b. 100
 - c. 111
 - d. 1000
 - e. 10011
 - f. 110010
 - g. 1011001
 - h. 111001
 - i. 1001100
 - j. 10100101
4. What is the highest decimal number that can be represented by each of the following numbers of binary digits (bits)?
 - a. Two
 - b. Four
 - c. Five
 - d. Eight
5. How many bits are required to represent the following decimal numbers:
 - a. 17
 - b. 35

- c. 49
- d. 114
- e. 132
- f. 205

BINARY - DECIMAL CONVERSIONS

- 6. Convert each decimal number to binary by using the sum-of-weights method:
 - a. 10
 - b. 17
 - c. 24
 - d. 93
 - e. 125
 - f. 186
- 7. Convert each decimal number to binary using repeated division by 2:
 - a. 15
 - b. 21
 - c. 28
 - d. 34
 - e. 40
 - f. 59

BINARY ARITHMETIC

- 8. Add the binary Numbers
 - a. 11+01
 - b. 10+10
 - c. 101+11
 - d. 111+110
 - e. 1001+101
 - f. 1101+1011

REMEMBER

<i>Addition</i>			<i>Value</i>	<i>Carry</i>
0	0		0	0
0	1		1	0
1	1		0	1
1	1	1	1	1