King Saud University
College of Computer and Information Sciences
Department of Computer Science

CSC 220: Computer Organization

Tutorial 4: Number Representation

1. **Choose the correct answer: (The numbers are represented in 2's complement if not mentioned otherwise)**

I. The 4-bit binary number 0111 represents

(a) 15, (b) -7 (c) 7 (d) -1

II. The unsigned decimal number 255 may be represented by

(a) 1111 1111B, (b) 10000000B, (c) EEEEH, (d) 0111 1111

III. The 8-bit binary number 1111 1111 represents

(a) 255, (b) -255 (c) -127 (d) -1

IV. The decimal number 127 may be represented by

(a) 1111 1111B, (b) 1000 0000B, (c) EEH, (d) 0111 1111

V. Information is stored and transmitted inside a computer in

(a) binary form (b) ASCII code form (c) decimal form (d) alphanumeric form

VI. The minimum number of bits required to store the hexadecimal number FF is

(a) 2, (b) 4, (c) 8, (d) 16.

VII. In computers, subtraction is generally carried out by

(a) 9's complement b) 10's complement

(c) 1's complement (d) 2's complement

2. Determine the decimal value represented by 1000 1011 in each of the following four systems.

1. Unsigned notation?
2. Signed magnitude notation?
3. One's complements
4. Two's complements?

3. Given decimal numbers A and B. Complete the table below:

A	B	A in 2's comp. (8 bits)	B in 2's comp. (8 bits)	A+B (8 bits binary)
16	-5			
-25	-10			

Home Works

Text book problems: 3-51, 3-52, 3-54, 3-55