**EEEN 222 Digital System Design**

**Homework 01**

**Due : 16-March-2018**

**Friday 17:00**

**Problem 1)** Convert the following numbers with the indicated bases to decimal:

* 1. (0111001)2
  2. (7654569)13

**Problem 2)** Convert the decimal number (2198,0125)to binary.

**Problem 3)** Perform following binary operations:

1. 1100111 + 11001
2. 10001001 × 101110
3. 1010011-10001110

**Problem 4)** Determine the base of numbers in each case for the following operations to

be correct

1. (93)a + (42)a = (105)a
2. (223)b / (7)b = (25)b

**Problem 5)** Express the following Boolean function in sum of minterms and in product of maxterms canonical representation

F(A,B,C,D)= A’+CD+ABC’+ B’D + ABD’

**Problem 6)** Derive the Reed-Müller canonical form of representation for the following Boolean function:

F(A,B,C,D)= A’BC’D + A’BCD + AB’CD’ + ABCD