EE 2720, Fall 2011

Homework # 5

Due Wednesday November 23, 2011 in class

Note: Please staple your homework

Problem 1: (a) Using a decoder with complemented outputs and a NAND gate implement the logic function

$F = \Sigma_{A,B,C,D}(0, 2, 4, 6, 9, 11, 13, 14, 15)$

(b) Using a decoder with complemented outputs and an AND gate implement the logic function of part (a) above

(c) Using a decoder with uncomplemented outputs and an OR gate implement the logic function of part (a) above.

(d) Using a decoder with uncomplemented outputs and a NOR gate implement the logic function of part (a) above.

Problem 2: Using a decoder with uncomplemented outputs and an OR gate implement the logic function $F = (A' + B + C') \cdot (B + C' + D) \cdot (A + C' + D')$

Problem 3: Using a decoder with complemented outputs and an AND gate implement the logic function of problem 2.

Problem 4: Using a decoder with complemented outputs and an AND gate implement the logic function

$$F = A' \cdot B \cdot C' + B \cdot C' \cdot D + A \cdot C' \cdot D'$$

Problem 5: Using a decoder with uncomplemented outputs and an OR gate implement the logic function of problem 4.