



Digital Systems (ENCS234)
Summer Semester 2017

Homework for Chapter 1

Due to: **July 20, 2017**

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1.4 What is the largest binary number that can be expressed with 16 bits? What are the equivalent decimal and hexadecimal numbers?

1.8 Convert the decimal number 431 to binary in two ways:

(a) convert directly to binary;

(b) convert first to hexadecimal and then from hexadecimal to binary. Which method is faster?

1.18 Perform subtraction on the given unsigned binary numbers using the 2's complement of the subtrahend. Where the result should be negative, find its 2's complement and affix a minus sign.

(a) $10011 - 10010$ (b) $100010 - 100110$

(c) $1001 - 110101$ (d) $101000 - 10101$

1.22 Convert decimal 6,514 to both BCD and ASCII codes. For ASCII, an even parity bit is to be appended at the left.

1.36 By means of a timing diagram similar to Fig. 1.5, show the signals of the outputs f and g in Fig. P1.36 as functions of the two inputs a and b. Use all four possible combinations of a and b.

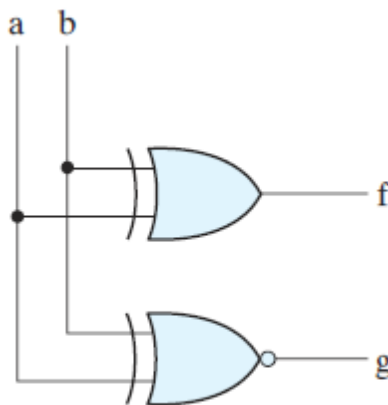


FIGURE P1.36