

# ENGIN112 - Introduction to Electrical and Computer Engineering

## Homework 8

**Due 25 November 2009 at 1:25 p.m. (before class starts)**

Please write down the course and homework number, and your name on all sheets. Answer the problems in the order they were listed in the assignment. Show all your work.

Solve the following problems.

1. Show the waveforms for output  $Q$  of a positive-edge **and** negative-edge triggered D flip-flop for the following sequence of input  $Din$ :  
 $Clk = 00110011001100110011001100$   
 $Din = 01111001100110011000011111$
2. 5.6
3. 5.7
4. 5.11
5. 5.12
6. 5.17 (Hint: use the algorithm for converting a binary number to a two's complement form that examines one bit at a time, described in the text on page 11. The least significant bit comes first in the input sequence)
7. 5.19(a)