Homework 4

ELEN 21/COEN 21
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Lecture 6

1. What is a basic latch?

2. What is a gated latch?

3. For the circuit below, provide the truth table and the timing diagram (Note: Look the slides from Lecture 6).
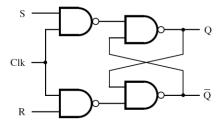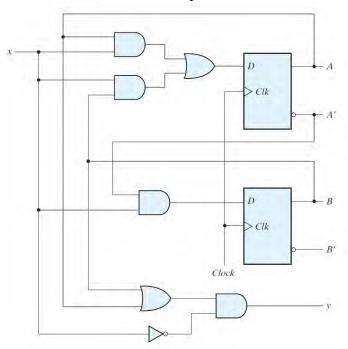

Figure 5.6   Gated SR latch with NAND gates.

Lecture 7

4. Write the truth table of the sequential circuit for the following figure.

5. A sequential circuit with two D Flip-Flops, A and B; two inputs, x and y; and one output, z, is specified by the following next-state and output equations:

$$A(t+1) = \overline{x(t)} \cdot y(t) + x(t) \cdot A(t)$$

$$B(t+1) = \overline{x(t)} \cdot B(t) + x(t) \cdot A(t)$$

$$z(t) = B(t)$$

i) Draw the logic diagram of the circuit.
ii) List the truth table for the sequential circuit.