Name:_____

CS370: Introduction to Digital Design | Instructor: B. Hemingway

Quiz #4

May 18, 2007

Quiz Policy:

No calculators, no collaboration. Your solutions are due at the start of class on Monday, May 21.
Please write your answers on this sheet (front and back).

(Word Problem) You are to develop a state diagram for a washing machine. The machine starts when a coin is deposited. It then sequences through the following stages: soak, wash, rinse, and spin. There is a "double wash" switch, which, if turned on, causes a second wash and rinse to occur. There is one timer—you may assume that each stage should take the same amount of time. The timer begins ticking as soon as the coin is deposited, generates a T signal at the end of the time period, and then resets itself and starts again. If the lid is raised during the spin cycle, the machine stops spinning until the lid is closed. You may assume that the timer suspends ticking while the lid is raised.

a. (10 points) Identify your inputs and outputs

b. (15 points) Draw a state diagram that implements this finite state machine.

c. (15 points) Construct the state table for this finite state machine.