CS309 Lab# 2

Objective:

Design and implement a special purpose system that allows access to doors 1 and 2 (D1 and D2 respectively) by persons who have been given a valid four digit binary code. The code is entered using four switches: S1, S2, S3, and S4. Each valid switch can be set to 0 or 1. The system gives access to doors according to the following scheme:

- a) D1 if 1001 or 1010 is entered.
- b) D1 and D2 if 0011 is entered.
- c) D2 if 1100 is entered.

Suggested Chips:

7404 – Hex Inverter 7408 – 2-Input AND Gate 7411 – 3-Input AND Gate 7421 – 4-Input AND Gate 7432 – 2-Input OR Gate

Part1: Construct a truth table, Karnaugh map, and a circuit diagram for this objective. Have a Hardware Lab TA verify your work.

Date Part 1 Completed: ______ Part 1 Approved By: _____

Part 2: Construct your circuit on the breadboards in the Hardware Lab. Have a Hardware Lab TA verify that your circuit works correctly.

Date Part 2 Completed: ______ Part 2 Approved By: _____

Note: You must have Part 1 completed and approved by a Hardware Lab TA prior to starting Part 2.