

Computer Engineering 315L
Digital System Design Lab
Spring 2008
Lab1
Binary Multiplier
Due 2/6/08

Purpose

This lab reviews combinational logic design

Assignment

Part I

Design and build a 2-bit by 2-bit multiplier circuit using a breadboard and IC chips. Test the circuit for all different input combinations. Tabulate your results and provide a short discussion of one or two of the results.

Part II

Extend the 2-bit by 2-bit multiplier design to realize a 4-bit by 3-bit multiplier. You do not have to build that circuit; only show the schematics on paper. Label all inputs and outputs.

Lab Report

- Lab reports should be **neatly typed and well organized**
- **No** hand-written documentation or hand-drawn schematics or diagrams will be accepted.
- Upon completion of the lab, your lab report should include:
 1. A cover page with your Name, Lab number and title, CPEN315, Spring 2008, and Date, all in order and in the center of the cover page. **(5 points)**
 2. Schematic diagram of the 2x2 bit multiplier circuit and a brief description of its operation. **(20 points)**
 3. Results and discussion. **(10 points)**
 4. Schematic diagram of the 4x3 bit multiplier circuit. **(10 points)**
 5. Cited work for reference(s) that you used for this lab. **(5 points)**

In addition to submitting the lab report, you need to demonstrate to me the performance of your 2x2 bit multiplier circuit on the due date. Late labs (report/demos) will be deducted 50%, even if one day late.

Grading

Multiplier Demo = 50%

Lab Report = 50%