Homework1: MEMORY INTERFACING (150 points)

Question 1: Interface sixteen (16) ***16K x 4 SRAM*** chips in two data banks each of 8-bit. The system has a 20-bit address and 16-bit data bus. The starting memory location for the SRAM is address 0x00000 and the address increases contiguously from this location.

- Use a separate $\overline{CS}$ signal for each chip.
- A0 = $\overline{BLE}$
- Use the $\overline{BLE}$, $\overline{BHE}$, $\overline{WR}$, and $\overline{RD}$ signals in your answer.

The design should ensure that you are able to write a 16-bit value in both banks, a 8-bit value in the low bank or a 8-bit value in the high bank. Show all your work and draw a diagram using any word-processing tool of your choice. Handwritten homeworks will not be accepted.

Question 2: Chapter 10, Problem 46 from the textbook. If you use the PAL 16L8 write the program. Standard signal definitions given in the book should be used. Reference section 10.5.

Question 3: Chapter 10, Problem 47 from the textbook. If you use the PAL 16L8 write the program. Standard signal definitions given in the book should be used. Reference section 10.6

No handwritten homeworks will be accepted. Use a word processing tool to write your answers and draw your diagrams.

Assignments in this class are individual efforts. Cheating in any assignment in this class, can lead to a failing grade in the class.