State University of New York – New Paltz
Electrical and Computer Engineering Department
Microprocessor Systems Design
Homework # 8

Due: Monday May 19th, 2003

Question 1: (25 Marks)
Design an assembly language program to calculate the following function using shift instructions: ($h = 4$)

\[ R = \frac{\left(\frac{m + k}{2}\right)}{8} \]

Question 2: (20 Marks)
Assuming the clock frequency of the microprocessor is 2 MHz, Design a one pulse from port B for 0.2 seconds.

Question 3: (25 Marks)
Design a program that reads a vector in four consecutive memory locations starting from address $100$, calculates the maximum and store it in location $F1$.

Question 4: (20 Marks)
The instruction in locations $010C$ and $010D$ is BRA XX. Where will the program branch to for each of the following values of XX?

a) BC  
b) AE  
c) 2F  
d) 4B  
e) F3

Question 5: (10 Marks)
If Accumulator A has the following data 10011001 what will be in A after the following the execution of the following instructions:

a) RORA  
b) LSRA  
c) LSRA