EC45

USN [| | | | | | | | |]

NEW SCHEME

Fourth Semester B.E. Degree Examination, July 2006
Electronics & Communication Engineering
Microprocessors

Time: 3 hrs.]

[Max. Marks:100

Note: 1. *Answer any FIVE full questions.*
2. *Comments should be provided for all programs.*

1 a. Explain with a neat block diagram the working of 8085 microprocessor with special emphasis on registers and their uses.
(10 Marks)
   b. What are flags? Give the structure and explain their significance with respect to 8085.
(05 Marks)
   c. What are the hardware and software interrupts available in 8085? Which has the highest priority?
(05 Marks)

2 a. What happens when the following instructions are executed?
      i) DAA   ii) XTHL   iii) JM addr   iv) CC addr   v) SBB C   (05 Marks)
   b. Write an assembly language program to find the square of an inputted number. The inputs are 0......9 and the ouputs should be 0......81.
(08 Marks)
   c. Give the timing diagram for ADD B. Explain the different signals
(07 Marks).

3 a. Generate a sawtooth by writing a suitable assembly language program. Modify the same to generate a triangular wave. What determines the altitude and base of the triangle?
(10 Marks)
   b. Find the greatest common denominator for 3 numbers. [Hint : Use subroutines]
(05 Marks)
   c. Use logical instructions to decide whether the given number, stored in memory is a Palindrome are not.
(05 Marks)

4 a. Multiply and divide two 16 bit BCD numbers (4 decimal digits) which are stored in memory. The results should be stored back in the same locations.   (10 Marks)
   b. Perform BCD to seven segment conversion using assembly language program.
(05 Marks)
   c. What are the machine control instructions?
(05 Marks)

5 a. Interface one 2K ROM and two 4K RAMS to 8085 through suitable hardware. What is the memory map of such a system?
(10 Marks)
   b. Differentiate between memory mapped I/O and I/O mapped I/O.   (05 Marks)
   c. What is the maximum number of external interrupts that can be connected to 8085 under any scheme? Explain.
(05 Marks)

6 a. Give the step by step actions taking place in 8085 when its execution is interrupted.
(10 Marks)
   b. How do you trouble shoot a program using the facilities available in a 8085 kit?
(05 Marks)

c. How do you mask the interrupts and how can we know that an interrupt is masked? (05 Marks)

7   a. What is DMA process? How is it facilitated by a DMA controller? Give the relevant control / status words. (10 Marks)

b. Generate a 5 minute delay using 8253 and 8085 setup. Assume any missing data suitably. (05 Marks)

c. Use BSR mode of 8255 to switch on LED ON for 1 second and then OFF for 2 seconds. Repeat this forever. (05 Marks)

8   a. Using 8251 in a synchronous mode, set up serial communication for the following specifications:- 2 stop bits, X16 clock speed, 8 bit character length, even parity. (10 Marks)

b. Interface 8279 with 8085 with following stipulations. Give only the control word 4 X 4 keyboard matrix, 6 displays encoded key scan, right entry for displays. (05 Marks)

c. What is RS232C standard? (05 Marks)

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