Fourth Semester B.E. Degree Examination, June / July 08
Microprocessors

Time: 3 hrs.   Max. Marks:100

Note : *Answer any FIVE full questions.*

1 a. Draw the block diagram of Microprocessor Controlled Temperature System (MCTS) and explain its working.   **(10 Marks)**
   b. With the help of neat block diagram, explain internal architecture of 8085. **(10 Marks)**

2 a. With the help of examples, explain how the instruction set of 8085 is classified. **(10 Marks)**
   b. Explain following instructions of 8085 :
      i) LHLD 2500 H   ii) XTHL   iii) PUSH PSW   iv) RLC   v) DAA.   **(10 Marks)**

3 a. Write an 8085 assembly language program to copy 10 bytes from one memory space to other memory space whose addresses are overlapping.   **(10 Marks)**
   b. Write an assembly language program to find square root of an eight bit number stored in suitable memory location. Store the result in next memory location.   **(10 Marks)**

4 a. Assume a crystal of 6.114MHz connected to 8085. Write a delay subroutine which generates delay of 0.5 msec.   **(08 Marks)**
   b. Write in detail what is stack and subroutine. Also discuss various operations that take place on the stack when subroutines are called and executed.   **(12 Marks)**

5 a. Differentiate between memory mapped I/o and peripheral mapped I/o.   **(06 Marks)**
   b. Draw the timing diagram of MOV A, B instruction with two wait states and explain.
                                                                          (06 Marks)
   c. Interface 2K × 8 ROM and 2K × 8 RAM to 8085 using 1K × 8 ICS. The ROM space starts from 0000H and RAM space from 8000H.   **(08 Marks)**

6 a. With reference to interrupts of 8085 explain :   i) Hardware and software interrupts
      ii) Vectored and Non vectored interrupts   iii) Maskable and Non maskable interrupts.
                                                                          (09 Marks)
   b. Write instructions to mask RST 7.5 and RST 5.5 and enable INTR.   **(03 Marks)**
   c. Draw the block diagram of 8259 PIC and explain its working.   **(08 Marks)**

7 a. Interface 8255 to 8085 in I/o mapped I/o mode with a base address of F0H. Clearly indicate the port addresses.   **(08 Marks)**
   b. Explain with control word reg' various operating modes of 8253.   **(12 Marks)**

8 a. What is DMA? How it is advantageous over other data transfer schemes? How it is classified? How it is carried out in 8085?   **(12 Marks)**
   b. Explain RS 232 serial communication standards.   **(08 Marks)**