



**B.E./ B.TECH. (FULL-TIME) DEGREE END SEMESTER EXAMINATIONS- APRIL/MAY 2011**

**COMMON TO MECHANICAL AND MANUFACTURING ENGINEERING BRANCH  
VI SEMESTER**

**ME 383 – MICROPROCESSORS AND INTERFACING  
(REGULATIONS 2004)**

**Time : 3 Hours**

**Max. Marks : 100**

**Answer ALL Questions**

**PART-A ( 10 x 2 = 20 Marks)**

1. What are the operations performed by the ALU of 8085 microprocessor?
2. What is the structure of Flag Register?
3. Define T-state and in which T state is the ALE signal is activated.
4. What is the significance of XCHG instruction?
5. What are the various schemes of data transfer?
6. Distinguish between peripheral mapped I/O and memory mapped I/O.
7. Why is a latch required to interface an output device with the 8085 microprocessor?
8. Give an outline for closed loop microprocessor based temperature control system.
9. Why microcontrollers are often classed single chip computers?
10. What is a special function register?

**PART-B ( 5 X 16 = 80 Marks)**

11. What are the various addressing modes available in 8085 microprocessor? Explain each addressing mode with two examples
- 12.a) Draw the timing diagram for the instruction LDA 5700 and explain.  
(OR)  
b) Explain the algorithm and write an assembly language program (ALP) the addition of multi byte numbers.
- 13.a) Show how you would interface a DIP switch keyboard with 8085 microprocessor using 8212. Write an ALP to generate a key code for the key pressed.  
(OR)  
b) Explain how a digital signal is converted into a analog signal with suitable diagram. Write an ALP to generate a square wave.
- 14.a) Draw and explain a typical stepper motor interface. Write an ALP to rotate the shaft 90° in the clockwise direction.  
(OR)  
b) Explain in detail the use of microprocessors in speed control of a motor.
- 15.a) Draw and explain the architectural details of the 8051 microcontroller.  
(OR)  
b) i) Explain the memory organization in the 8051 microcontroller. (8)  
ii) Explain the various interrupts used in 8051 microcontroller. (8)