Reg. No. | | | | | | | | |

B.E./ B.TECH. (FULL-TIME) DEGREE END SEMESTER EXAMINATIONS- NOV./DEC. 2011

(53)

**COMMON TO MECHANICAL AND MANUFACTURING ENGINEERING**
**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 is the structure of the flag register?
2. What is Hold and HLDA signals?
3. Define machine cycle and Instruction cycle.
4. How many machine cycles are there in CALL instruction and indicate the different machine cycles?
5. Write the control word format for the I/O mode of the 8255 PPI?
6. What is the function of short of conversion and end of conversion signal in ADC?
7. Differentiate between permanent magnet stepper motor and variable reluctance stepper motor.
8. Sketch the schematic diagram of speed measurement and display of a motor.
9. Why only memory mapped I/O port address is used in 8051?
10. What are the instructions that read the port pins?

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

11. Explain the architecture of 8085 microprocessor and explain in detail all the blocks.

12.a) i) Draw the timing diagram for the instruction STA 4700 and explain. (13)
ii) Calculate the time taken to execute the instruction STA 4700, if the clock frequency is 2 MHZ. ( 3 )

(OR)

b) Draw the flow chart and write an assembly language program to multiply two 8 bit numbers.

13.a) i) Illustrate the seven segment LED interface with 8085 microprocessor. (12)
ii) Write an assembly language program(ALP) to display a number 05. ( 4)

(OR)

b) i) Interface an A/D converter with 8085 microprocessor and explain. (12)
ii) Write an ALP to generate a saw tooth wave form. ( 4 )

14.a) Explain with block diagram of microprocessor based temperature control system.

(OR)

b) Explain with block diagram of microprocessor based stepper motor control system.

15.a) With the help of a functional diagram explain the architecture of 8051 microcontroller.

(OR)

b) i) Explain the memory organization in 8051 microcontroller. ( 8 )
ii) Explain the different modes of Timer in 8051 microcontroller. ( 8 )