

--	--	--	--	--	--	--	--

A

## ***B.Tech. Degree V Semester Examination November 2014***

### **EE 1504 MICROPROCESSOR BASED SYSTEMS** (2012 Scheme)

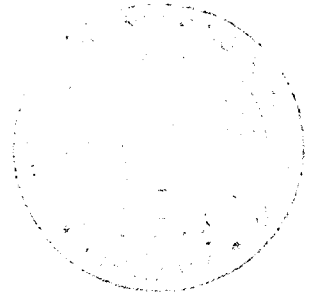
Time: 3 Hours

Maximum Marks: 100

#### **PART A** (Answer *ALL* questions)

(8 × 5 = 40)

- I. (a) Distinguish between I/O mapped I/O and memory mapped I/O techniques.
- (b) Define stack and stack pointer. Explain the instructions used for accessing stack.
- (c) Write short notes on:
  - (i) Instruction cycle
  - (ii) Machine cycle
  - (iii) T state
- (d) Write a time delay subroutine to generate time delay of 1 msec. Assume clock frequency of processor as 2 MHz.
- (e) Explain the mode set control word in 8255 programmable peripheral interface.
- (f) Draw the block diagram of 8279 keyboard display interface.
- (g) Compare and contrast microprocessors and microcontrollers.
- (h) Explain the modes of operation of timer in 8051 microcontroller.



#### **PART B**

(4 × 15 = 60)

- II. (a) Explain the function of the following pins of 8085 microprocessor. (10)
  - (i) ALE (ii) READY (iii) HOLD
  - (iv) INTR (v) TRAP
- (b) Discuss the concept of demultiplexing of address/data bus in 8085 processor with a schematic diagram. (5)
- OR**
- III. Draw the functional block diagram of 8085 microprocessor and explain the functions of each block. (15)
- IV. (a) Draw and explain the timing diagram of the instruction LDA 2500<sub>H</sub>. (10)
- (b) Explain the functions of the following instructions. (5)
  - (i) CMP B
  - (ii) LHLD address
  - (iii) RAL
  - (iv) ACI data
- OR**
- V. (a) Write an assembly language program to find the largest of 'n' numbers stored at consecutive memory locations starting from the address 4001<sub>H</sub>. Value of n is stored at the address 4000<sub>H</sub>. The result need to be stored in the memory location 4500<sub>H</sub>. (10)
- (b) Explain the different addressing modes in 8085 microprocessor. (5)

(P.T.O.)

VI. Draw and explain the internal block diagram of 8253 programmable timer. Explain any two modes of operation with figures. (15)

**OR**

VII. Draw the block diagram of 8251 programmable communication interface. Explain the functions of each block. (15)

VIII. (a) Describe the internal memory organisation of 8051 microcontroller. (10)

(b) Explain the flag register of 8051 microcontroller. (5)

**OR**

IX. Discuss the pin out of 8051 microcontroller and give the functions of each pin. (15)

\*\*\*