A – 6542

Reg. No. : ....

Name : ....

Fifth Semester B. Tech. Degree Examination, October 2016
(2013 Scheme)
13.505 : MICROPROCESSORS AND INTERFACING (R)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Explain the following 8086 microprocessor instructions with examples.
   a) ROL
   b) JNE

2. Explain the following signals of 8085 microprocessor.
   a) HOLD
   b) RST 7.5

3. Describe the functions of 8086 prefetch queue.

4. How 8086 microprocessor finds the address of an interrupt service routine ?

5. What are the purposes of CAS pins and SP/$\overline{EN}$ pins of 8259 A chip ?

PART – B

Answer **any one** question from **each** Module.

Module – I

6. a) Differentiate between memory mapped I/O and I/O mapped I/O.   8

   b) Explain the internal architecture of 8085 microprocessor with a neat sketch.   12

OR

7. a) List the sequence of events that occurs when the 8085 microprocessor reads from memeory. **10**

   b) Give an interfacing circuitry to interface 2K bytes of EPROM (one chip) and 2K bytes of RAM (4 chips) to the 8085 microprocessor. The starting address of EPROM is 0000H and that of RAM is 6000 H. Give the memory map of your system and explain the chip select logic. **10**

Module – II

8. a) Draw the timing diagram of I/O write machine cycle of 8085 processor. Explain the activities of control and status signals involved. **12**

   b) Explain the physical memory organization in 8086 based system. **8**

OR

9. a) Explain the register set of 8086 processor. **10**

   b) Explain the following signals of 8086 microprocessor
      i) BHE
      ii) NMI
      iii) $\overline{LOCK}$
      iv) $\overline{DT}/\overline{R}$
      v) $MN\overline{MX}$. **10**

Module – III

10. a) Write an 8086 based assembly language program to find the number of odd and even numbers from a given series of numbers. **10**

   b) Explain the following assembler directives
      i) EQU
      ii) DW
      iii) SHORT
      iv) ORG
      v) OFFSET **10**

OR

11. a) Write an 8086 based assembly language program to find the largest number among a set of unordered bytes, stored in location starting from a known address. 10

    b) What do you mean by addressing modes ? What are the different addressing modes supported by 8086 processor ? Explain with suitable examples. 10

Module – IV

12. a) Draw and explain the block diagram of 8254 chip. 10

    b) Explain different modes in which 8255A can be initialized. Explain the control word format. 10

OR

13. a) Draw and explain the architecture of 8237 DMA controller. 10

    b) What is the advantage of using 8279 as keyboard/display interface ? Explain encoded scan mode and decoded scan mode. 10