G 6746 (Pages : 3) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, APRIL 2011

Third Semester

Branch : Computer Science and Engineering

MICROPROCESSOR SYSTEMS (R)

(2002 admission onwards)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

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

1. Explain the function of the following pins of 8085 : —
   (i) TRAP.
   (ii) HLDA.
   (iii) $\overline{\text{INTA}}$.
   (iv) SOD.
2. State the general purpose and special purpose registers in 8085 and their uses.
3. What are the differences between the SUBTRACT and COMPARE instructions ? Explain with examples.
4. Let (2000) = 06 H and (2001) = 04 H. What are the contents of H and L registers after the execution of LHLD 2000 ?
5. Write a delay subroutine for 10 m sec using the instructions of 8085 having clock frequency 3 MHz.
6. What do you understand by an instruction cycle ? How it differs from the machine cycle ?
7. Discuss the following sections of 8085 : —
   (i) interrupt control.
   (ii) serial input/output control.
8. Explain the purpose and features of RST instructions ?

Turn over

9. What are the various schemes of I/O data transfer from CPU to I/O devices and vice versa ? Explain any *one* scheme in detail.

10. What do you mean by memory mapping ? Discuss with an example.

(10 × 4 = 40 marks)

Part B

Answer any **one** *full question from each module.*
Each full question carries 12 *marks.*

Module 1

11. (a) (i) Explain how the data lines and address lines of 8085 are multiplexed and demultiplied ?

(6 marks)

(ii) With the help of neat diagram show how the locations in the main memory are addressed by the processor ?

(6 marks)

Or

(b) Draw a simple circuit to generate power ON and Reset IN signals of 8085 and explain the function of various registers, flip-flops and interrupts ?

Module 2

12. (a) What are the various types of instruction formats of 8085 ? Give example for each format.

Or

(b) Describe all the addition operators used in 8085 with suitable examples. Show their addressing modes.

Module 3

13. (a) Describe the situations when the machine cycle of 8085 are neither READ nor WRITE cycles. Draw and explain the timing diagram of Bus Idle machine cycle for RST 7.5 ?

Or

(b) Explain with necessary timing diagrams, how the memory read machine cycle differs from opcode fetch machine cycle of 8085 ? Describe the status signals and control signals for the above clearly.

Module 4

14. (a) Describe in detail all the hardware and software interrupts available in 8085 ?

Or

(b) Draw the internal architecture of 8259. Explain each block. Give the significance of priority of interrupt.

Module 5

15. (a) How can you select 8 blocks of address each of 4 kB area using a decoder IC ? Draw and explain the arrangement showing all signals.

Or

(b) (i) What are the basic functions, which a DMA controller is supposed to perform for DMA data transfer ?

(6 marks)

(ii) Compose 256 × 8 ROM into 2 K × 8 ROM ? Draw the circuit. (6 marks)

[5 × 12 = 60 marks]