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M S RAMAIAH INSTITUTE OF TECHNOLOGY
(AUTONOMOUS INSTITUTE, AFFILIATED TO VTU)
BANGALORE – 560 054
SEMESTER END EXAMINATIONS - JUNE 2009

Course : **B.E.(Information Science & Engineering)** **Semester : IV**

Subject Code : **IS43** **Subject** : **Microprocessors**

Maximum Marks : **100** **Duration** : **3 Hours**

Instructions to the Candidates: Answer one full question from each unit.

UNIT – I

1. a) Draw the bit pattern for flag register of 8086 and explain the significance of each bit. (10)

   b) Explain addressing modes of 8086 with help of examples. (10)

2. a) Describe with neat diagram the internal architecture of 8086 microprocessor. (10)

   b) Explain the segment registers and their purpose in the operation of the microprocessor. (10)

UNIT – II

3. a) What is macro? How it is different from subroutine. Briefly explain with an example. (10)

   b) Write an assembly program to sort ten 16 bit numbers in ascending order using insertion sort. (10)

4. a) Write an assembly program to sort ten 8 bit numbers in ascending order using bubble sort technique. (10)

   b) Briefly explain conditional statements used in Assembly level programming and conditional statements used in Macros. (10)

UNIT – III

5. a) Explain the following 8086 instructions. (10)

   a) CMC b) CLD c) STI d) HLT e) WAIT

   b) What do you mean by assembler directives and explain their functions. (10)

6. a) With the help of an example, describe the action performed by microprocessor for each of the following instructions. (10)

   a) XLAT b) PUSHF c) LEA d) IN e) OUT

   b) Discusses all types of Rotate and shift instructions used in 8086. (10)

UNIT – IV

7. a) Briefly explain 8086 Interrupt types with their priorities. (10)

   b) Sketch the pin-out diagram of 8086/88 explain the functions of each pin. (10)

8. a) Sketch block diagram showing basic 8086 minimum mode system and explain for memory read and write. (10)

   b) Draw and explain the typical 8088 system timing diagram. (10)

UNIT - V

9. a) Interface an 8-digit 7 segment LED display using 8255 to the 8086 microprocessor system and write an 8086 assembly language routine to display message on the display. (10)

   b) Explain different way of I/O addressing. (10)

10. a) With help of pseudo code and flow chart explain how to interface DAC to microprocessor and list its features. (10)

    b) With help of block diagram explain the internal architecture of programmable peripheral interface 8255. (10)

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