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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Fourth Semester, B.E. - Information Science and Engineering
Semester End Examination; June - 2016
Microprocessor

Time: 3 hrs   *Max. Marks: 100*

*Note: Answer any **FIVE** full questions, selecting **ONE** full question from each **unit**.*

UNIT - I

1 a. Explain with a neat diagram, the architecture of 8086 microprocessor.   8

  b. Explain the following addressing mode with an example :

   i) Immediate   ii) Base plus Index   8

   iii) Direct memory addressing   iv) Input addressing

  c. Identify the error in the following instruction and justify your answer :

   i) MOV DS; SS   ii) MOV 1234H, AX   4

2 a. Draw and explain the bit patterns of flag registers of 8086 processor.   8

  b. What is segmentation? What are the advantages of segmentation in 8086 processor?   6

  c. Generate the machine code for the following instructions:

   i) MOV [1000H] , DI   ii) MOV AX, 1234H[BX+SI]   6

UNIT - II

3 a. Explain briefly stack memory addressing in 8086 processor.   6

  b. Explain the following instructions :

   i) LEA   ii) XCHG   iii) DAA   10

   iv) LDS   v) MUL

  c. Explain the differences between the following instruction: 4

   i) MOV AX, N_1 and LEA, AX, N_1 ii) SUB and CMP

4 a. Explain shift and rotate instructions of 8086 processor with example   .10

  b. What is an assembler directives? Explain any four assembler directives.   10

UNIT - III

5 a. Write an assembly language program to compute n Fibonacci numbers.   10

  b. Differentiate between procedures and macros.   6

  c. Explain NOP and HLR instructions.   4

6 a. Write an assembly language program to search for the key in a given list using Linear search. 10

  b. Differentiate between calling a far procedure and a near procedure.   6

  c. Explain segment override prefix with example.   4

UNIT - IV

7 a. Explain the following string instructions :

    i) MOVS   ii) STOS   iii) CMPs   6

  b. Write an assembly language program to move string from one location to another location.   8

  c. What are interrupts? Explain the types of Interrupts.   6

8 a. Write an assembly language program to reverse a given string and check for palindrome.   10

  b. Discuss the steps involved in handling interrupts. How to obtain INTR interrupt address by 8086 processor?   10

UNIT - V

9 a. Explain the following pins of 8086 processor

    i) ALE   ii) RESET   iii) CLK   10

    iv) $DT\overline{R}$ v) $MN/\overline{MX}$

  b. With a neat diagram, explain the maximum mode configuration of 8086 processor.   10

10 a. With a neat diagram, explain the working of 8259 interrupt controller.   10

  b. Give the differences between minimum mode and maximum mode configuration.   6

  c. Compare 8086 and 8088 processor.   4

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