



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fourth Semester, B.E. - Information Science and Engineering

Semester End Examination; May/June - 2019

Microprocessor

Time: 3 hrs

Max. Marks: 100

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

UNIT - I

- 1 a. Explain the architecture of 8086 microprocessor in detail with neat diagram. 12
- b. With example, explain the following arithmetic instructions : 8
- i) ADC ii) SBB iii) NEGATE iv) IMUL
- 2 a. Define addressing mode. Explain the different addressing modes available in 8086 processor with suitable examples. 12
- b. Explain the following data transfer instruction with example : 8
- i) XCHG ii) LAHF iii) LDS iv) PUSHF

UNIT - II

- 3 a. Distinguish conditional branch and unconditional branch instructions with examples. 10
- b. Write an assembly language program to find the number of 1's (one's) in the byte 97H. 10
- 4 a. List the different segment register and its default offset register with proper example. 8
- b. Discuss the list of following instructions with suitable example : 12
- i) ORG ii) ASSUME iii) EQU iv) DUP v) DB vi) THIS

UNIT - III

- 5 a. Illustrate the working of interrupt and its service routines in details. 12
- b. How the stack operation is performed in 8086 microprocessor? Explain it with an example 8
- 6 a. Explain about procedures and macros in detail. 12
- b. Write an assembly language program to sort a set of unsigned integer numbers in ascending order using bubble sort algorithm. 8

UNIT - IV

- 7 a. With an example, define the following instructions : 10
- i) REPE ii) MOVSW iii) CLD iv) SCASB v) LODS
- b. What is Direct Memory Access? Explain the DMA based data transfer using DMA controller. 10
- 8 a. Mention the various operations performed by Input/output interface devices. 12
- b. Draw the suitable diagram and explain the use of XLAT instruction with example. 8

UNIT - V

- 9 a. Discuss minimum mode operation in 8086 with neat diagram. 10
- b. Explain the memory write bus operation of 8086 processor. 10
- 10 a. Describe the maximum mode of operation in 8086 with suitable diagram. 10
- b. Draw the block diagram of 8259 programmable interrupt controller and explain its priority mode. 10