

2002 SCHEME

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CS45

Fourth Semester B.E. Degree Examination, December 2012

Introduction to Microprocessor

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Explain the architecture of 8086 microprocessor with neat block diagrams. (10 Marks)
b. With a timing diagram, explain the read operation in minimum mode. (10 Marks)
- 2 a. What is an addressing mode? Explain the different types of addressing modes. (10 Marks)
b. Explain the instruction template for MOV instruction. Generate binary code for MOV, AX, BX. (10 Marks)
- 3 a. Explain the following instructions with an example:
i) XLAT ii) DAA iii) CMP iv) LEA (10 Marks)
b. What are assembler directives? Explain the following assembler directives:
i) MODEL ii) EQU iii) DUP iv) PROC v) ENDP (10 Marks)
- 4 a. Differentiate between 8086 and 8088 microprocessors. (06 Marks)
b. Differentiate between macros and procedures. (06 Marks)
c. Write an ALP to generate time delay of 100 msec, using 8086 microprocessor with 10 MHz clock. (08 Marks)
- 5 a. Write an ALP to sort 5, 16 bit members stored in an array in ascending order using Bubble sort method. (10 Marks)
b. Write an ALP to count number of vowels in a given string. (10 Marks)
- 6 a. Interface two chips of 32 k × 8 ROM and 4 chips of 32 k × 8 RAM with 8086 according to the following map.
ROM 1 and 2 F0000H – FFFFF H
RAM 1 and 2 D0000H – DFFFF H
RAM 3 and 4 E0000H – EFFFF H (10 Marks)
b. Explain the architecture of 8254 with a neat block diagram. (10 Marks)
- 7 a. Explain the structure of interrupt vector table of 8086/8088 μ p. Explain hardware interrupt. (10 Marks)
b. Explain DMA operation in detail. (10 Marks)
- 8 a. Explain functioning of 8255 with a neat block diagram. (08 Marks)
b. Find out control word for 8255 PPI for mode 0 with port A as input and ports B, C as output ports. (04 Marks)
c. Explain a typical stepper motor interface and write an ALP to rotate 4 phase stepper motor clockwise by 4 rotation (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

