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10EC/TE62

Sixth Semester B.E. Degree Examination, June/July 2017
Microprocessors

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Explain the architecture of 8086 microprocessor with a neat block diagram. **(10 Marks)**

b. Explain about Instruction execution time dependency parameters. **(05 Marks)**

c. Determine the physical address resulting from the following instructions :
i) MOV DL, [BP + SI] ii) MOV DI, [BX + 100H]
iii) MOV [BP + DI + 5], AH iv) MOV AL, [5036H]
BP = 7000H , SI = 0350H , SS = 8000H
BX = 4FFFH , DS = 2000H AND DI = 6A00H. **(05 Marks)**

2 a. Explain the following instruction function with an example :
i) DAA ii) IDIV iii) AAM iv) XLAT. **(04 Marks)**

b. Opcode for ADD instruction is 000000DW. Determine the machine language code for the following : i) ADD CL, BH ii) ADD 4523 [BX + DI] , DX. **(06 Marks)**

c. What are Assembler directives? Explain the significance of the following :
i) EQU ii) ALIGN iii) DT iv) ASSUME v) MACRO. **(10 Marks)**

3 a. Using table translation instruction write a program to find equivalent seven segment code for the given BCD digit. **(06 Marks)**

b. Explain the following string instructions with examples :
i) MOVSB ii) CMPSB iii) SCASB iv) Repeat prefix (REP). **(08 Marks)**

c. Write a program to check the given string is Palindrome or not and display the suitable message. **(06 Marks)**

4 a. Draw the interrupt vector table and write the sequence of operation that are performed when an interrupt is recognized. **(10 Marks)**

b. Define the following interrupts :
i) Type 0 ii) Type 1 iii) Type 3 iv) Type 4 **(04 Marks)**

c. Write a macro to read a character without echo and read a string of characters from the keyboard. **(06 Marks)**

PART – B

5 a. Explain about mXn matrix key board interface diagram along with program and flow chart. **(10 Marks)**

b. Define Stepper motor. Explain the interfacing of a stepper motor to 8086 microprocessor with necessary circuit diagram. Write an ALP to rotate the stepper motor clockwise by n steps and anti clock wise by m steps. **(10 Marks)**

6 a. With a neat diagram, explain the architecture of 8087 coprocessor. **(10 Marks)**

b. Write 8087 ALP to compute the area of the circle. **(05 Marks)**

c. Convert $(1259.125)_{10}$ in short real, long real and temporary real formats. **(05 Marks)**

7 a. With a neat block diagram, explain the maximum mode operation of 8086. **(10 Marks)**

b. Write short note on : i) PCI and ii) USB. **(10 Marks)**

8 a. Briefly explain about 80386 special registers. **(10 Marks)**

b. Explain the memory system of 80386 with diagram. **(04 Marks)**

c. Write the salient features of 80486. **(06 Marks)**

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