USN [ ][ ][ ][ ][ ][ ][ ][ ][ ]   **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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