Sixth Semester B.E. Degree Examination, July/August 2022
Microprocessors

Time: 3 hrs.   Max. Marks:100

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

PART – A

1 a. Draw the internal architecture of 8086 and briefly explain the flag register. **(10 Marks)**
   b. Explain the following instructions:
      (i)   XLAT
      (ii)   SCASB
      (iii) LEA BX, 56H[SI]
      (iv)   DAA
      (v)   AAA.   **(10 Marks)**

2 a. Explain the following directives:
      (i)   DW
      (ii)   ORG
      (iii) EVEN
      (iv)   PROC
      (v)   ASSUME.   **(10 Marks)**
   b. Write a program to find the member of 0's and 1's in a given byte.   **(05 Marks)**
   c. Give 2 examples of segment over-ride prefix and explain.   **(05 Marks)**

3 a. Explain the different string instructions.   **(12 Marks)**
   b. Bring out the differences between macros and procedures.   **(08 Marks)**

4 a. Explain the functions of any five dedicated software interrupts-8086. **(08 Marks)**
   b. Write a program to reverse a string of characters.   **(12 Marks)**

PART – B

5 a. Explain the interface of a matrix keyboard to the 8086 microprocessor. **(10 Marks)**
   b. Explain the different types of key switches.   **(05 Marks)**
   c. Explain key debouncing.   **(05 Marks)**

6 a. Explain with a block diagram the architecture of 8087 co-processor.   **(10 Marks)**
   b. Write an ALP to find the area of a circle. Using 8086 and 8087 instructions. **(05 Marks)**
   c. Explain :
      (i)   FSQRT
      (ii)   FSCALE
      (iii) FPREM
      (iv)   FRNDINT
      (v)   FXTRACT   **(05 Marks)**

7 a. Explain the read cycle timing diagram for minimum mode.   (06 Marks)
   b. Explain the Peripheral Component Interconnect (PCI) bus in a personal computer system.
                                                                                  (06 Marks)
   c. Explain :
      (i) $\overline{R_D}$
      (ii) $\overline{W_R}$
      (iii) $\dfrac{MN}{\overline{M_X}}$
      (iv) $\overline{TEST}$ (08 Marks)

8   Write short notes on:
   a. 80386 special registers.   (06 Marks)
   b. Pentium processors.   (08 Marks)
   c. Differences between 80386 and 80486.   (06 Marks)

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