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A101
1F19-01

10EC/TE62

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.***

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.

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) $\frac{MN}{\overline{M_X}}$

(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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