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10CS45

Fourth Semester B.E. Degree Examination, June/July 2019
Microprocessors

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast 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. With a neat functional block diagram discuss the architecture of 8086 processor. **(10 Marks)**
b. Describe the process of physical address generation in 8086 with an example. **(06 Marks)**
c. Compare and contrast real and protected mode memory addressing. **(04 Marks)**

2 a. Define Paging. Draw and discuss the paging mechanism of advanced processors. **(10 Marks)**
b. Define addressing mode. Discuss any five data addressing modes with an example to each. **(06 Marks)**
c. Construct machine code for the following instructions:
(i) MOV BX , CX (ii) MOV DL , [SI + 1240H] **(04 Marks)**

3 a. Explain the following instructions with an example:
(i) MUL (ii) XLAT (iii) AAM (iv) CMPSB (iv) LOCK **(10 Marks)**
b. Define assembler directives. Explain the following assembler directives with an example.
(i) PUBLIC (ii) ORG (iii) PROC (iv) EQU **(10 Marks)**

4 a. Discuss shift instructions with an example. **(08 Marks)**
b. Write an assembly level program to sort an array of N bytes in an ascending order using bubble sort technique. **(08 Marks)**
c. What are the differences between NEAR and FAR procedures. **(04 Marks)**

PART – B

5 a. Compare MACRO with procedure. **(04 Marks)**
b. Define Modular programming. Write an algorithm to convert Binary number to ASCII. **(08 Marks)**
c. Develop an assembly level program to read 2 digit Hexadecimal number and display the same on the screen. **(08 Marks)**

6 a. What are the functions of the following pins of 8086 processor:
(i) ALE (ii) MN / $\overline{MX}$ (iii) NMI (iv) QS0, QS1 (v) HOLD **(10 Marks)**
b. Draw and discuss the maximum mode of 8086 processors. **(10 Marks)**

7 a. Explain 8086 memory interfacing with an example. **(08 Marks)**
b. Explain absolute address decoding technique with its block diagram. **(08 Marks)**
c. Write differences between I/O mapped I/O and memory mapped I/O. **(04 Marks)**

8 a. Describe the architecture of 8255 PPI, with its block diagram. **(10 Marks)**
b. What is IVT? Explain IVT with its structure. **(10 Marks)**

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