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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.**

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) $\overline{MN} / \overline{MX}$ (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)

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.