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**VIT**

Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

## Continuous Assessment Test – I

Programme Name & Branch:

**BTECH COMPUTER SCIENCE AND ENGINEERING**

**Course Name & Code: MICROPROCESSOR AND  
INTERFACING TECHNIQUES CSE 2006**

### COMMON TO ALL BATCHES

Slot: C1

Exam Duration: 1.30 Hr. Maximum Marks: 50

Part A.

Answer all questions

5 x 10 = 50 marks

✓ Discuss in detail the pipelined architecture of 8086 microprocessor supported with internal block diagram. Briefly explain the physical memory organization of 1Mbytes of memory and physical address formation 8086.

✓ Explain the functions of the signals of 8086 mentioned in the following Table 2.1. Also indicate their mode of operation in 8086.

|   |   |
|---|---|
| <del>H</del> OLD /HLDA                                  | <del>RQ</del> /GT <sub>0</sub> , RQ/GT <sub>1</sub>         |
| <del>M</del> WR   | <del>L</del> OCK  |
| <del>M</del> /IO  | <del>S</del> <sub>2</sub> , S <sub>1</sub> , S <sub>0</sub> |
| <del>D</del> I/R  | <del>Q</del> EN   |
| <del>Q</del> S <sub>0</sub> Q <del>S</del> <sub>1</sub> | <del>A</del> LE   |

Table 2.1

✓ Describe the addressing modes of 8086 mentioned in the following Table 3.1. Briefly explain at least two example instructions for every addressing mode with effective address formation for memory operands.

|                                    |                           |
|------------------------------------|---------------------------|
| <del>R</del> egister Indirect      | <del>I</del> ndexed       |
| <del>R</del> egister Relative      | <del>B</del> ased Indexed |
| <del>R</del> elative based Indexed |                           |

Table 3.1

✓ Explain the assembler directives of 8086 mentioned in the Table 4.1. Give examples for every assembler directive mentioned in the Table 4.1.

| Assembler Directive        |
|----------------------------|
| <del>Q</del> B, DW & DT    |
| <del>E</del> QU (equate)   |
| <del>O</del> FFSET         |
| <del>A</del> SSUME         |
| <del>L</del> OCAL & GLOBAL |

Table 4.1

5. (a) Write an assembly language program using the instruction set of 8086 to find the factorial of a given number initialized in data segment. (5)

(b) Write an assembly language program using the instruction set of 8086 to generate Fibonacci series with number of terms initialized. (5)