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S.E. (Infor. Tech.) (II Sem.) EXAMINATION, 2009

MICROPROCESSOR SYSTEMS

(2003 COURSE)

Time : Three Hours **Maximum Marks : 100**

N.B. :— (*i*) Answer any *three* questions from each Section.

(*ii*) Neat diagrams must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

(*iv*) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(*v*) Assume suitable data, if necessary.

SECTION I

1. (*a*) With the help of a block diagram, explain the basic architecture of 8086 processor in detail. [12]

(*b*) Draw functional diagram of 8086 in minimum mode. [6]

Or

2. (*a*) Draw timing diagram of memory read cycle for 8086 and explain. [8]

P.T.O.

(*b*) Draw functional diagram of 8086 in maximum mode. Describe signals/pins used in maximum mode. [10]

3. (*a*) Draw programmers model of 8086. Explain. [8]

(*b*) Explain any *four* addressing modes with example. [8]

Or

4. (*a*) Explain difference between : [8]

(*i*) Far and near procedure

(*ii*) .exe and .com

(*b*) Explain the following directives : [8]

(*i*) EXTRN

(*ii*) PUBLIC

(*iii*) DB

(*iv*) .Stack

5. (*a*) Explain different types of interrupts in 8086. [8]

(*b*) Draw block diagram of 8259. Explain. [8]

Or

6. (*a*) Draw block diagram of 8253. Explain. [8]

(*b*) Explain IVT of 8086 in detail. [8]

SECTION II

7. (*a*) What are different operating modes of 8255 ? Explain. [8]

(*b*) Configure 8255 with Port A and Port B as i/p (input) ports and and Port C as o/p (output) port. Clearly show control word format for the same and instructions used for initialization of 8255. [8]

Or

8. (*a*) Give difference between synchronous and asynchronous communication. [8]

(*b*) Draw block diagram of 8251. Explain. [8]

9. Explain how 80386 converts logical address to physical address when 80386 is operating in real mode and protected mode with the help of all descriptors and registers. [18]

Or

10. (*a*) Explain how 80386 will access code from PL_1 if it is running at PL_3 ? Explain with the help of CALL GATE. [12]

(*b*) What is the meaning of privileged instructions ? Give examples. [4]

(*c*) How 80386 switches from RM to VM ? [2]

11. (*a*) What is exception ? Explain its types. [8]

(*b*) Explain TSS (Task State Segment) with the help of diagram. [8]

Or

12. (*a*) What are features of pentium ? Draw architecture diagram of pentium processor. [12]

(*b*) Explain significance of TS bit and NT bit. [4]