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Total No. of Questions—12]

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[4062]-214

S.E. (IT) (II Sem.) EXAMINATION, 2011

PROCESSOR ARCHITECTURE AND INTERFACING

(2008 PATTERN)

Time : Three Hours

Maximum Marks : 100

- N.B. :—**
- (i) Answer any *three* questions from each Section.
 - (ii) Answers to the two Sections should be written in separate answer-books.
 - (iii) Neat diagrams must be drawn wherever necessary.
 - (iv) Figures to the right indicate full marks.
 - (v) Assume suitable data, if necessary.

SECTION I

1. (a) What is BIU in 80386 processor ? What are the functions of BIU ? [8]
- (b) With a neat diagram explain the memory segmentation of 80386 processor. [10]

Or

2. (a) Explain the debug registers of 80386 processor with their formats. [10]
- (b) List and explain the hardware interrupt pins of 80386 processor. [8]

P.T.O.

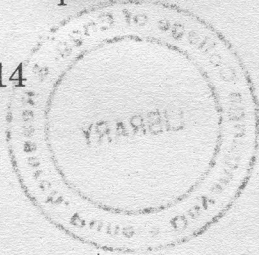
3. (a) With examples explain the different addressing modes of 80386 processor. [10]
- (b) What are assembler directives ? Explain any *three* assembler directives used in 80386 programming. [6]

Or

4. (a) Explain with diagram interface of 4×4 keyboard matrix with the 8255 Programmable Peripheral Interface. [10]
- (b) What is segment override prefix ? With an example explain the implementation of segment override prefix. [6]
5. (a) List and explain the different Descriptor Table Registers used in protected mode of 80386 processor. [10]
- (b) What is virtual memory of 80386 processor ? How is it created in 80386 processor using segmentation mechanism ? [6]

Or

6. (a) Explain the working of segment selector in protected mode operation of 80386 processor. [8]
- (b) Explain the code segment descriptor format in 80386 processor. [8]



SECTION II

7. (a) State the differences in Virtual Mode of 80386 and 8086 processor. [10]
- (b) Explain the difference between 3 operating modes of 80386. [8]

Or

8. (a) What is a Call Gate ? Explain how it is used in calling a function with a higher privilege level. [10]
- (b) Explain how 80386 handles interrupts and exceptions in protected mode. [8]

9. Draw and explain the internal memory organization of 8051 Microcontroller. [16]

Or

10. (a) Draw an interfacing diagram of 8051 with 16 K × 8 program memory (EPROM) using 8 KB devices and 8 K × 8 data memory (RAM) using 8 KB devices. Explain. [12]
- (b) Write ALP to configure port 0 to i/p and port 2 to o/p for 8051. [4]

11. (a) Explain the timer and counter operations in Mode 0 and Mode 2 of 8051. [8]
- (b) List the features of PIC 16F8XX series of microcontrollers. [8]

Or

12. Explain the different operating modes of serial communication in 8051. [16]