Total No. of Questions—**12**] [Total No. of Printed Pages—**3**

Seat No.	

[4857]-214

S.E. (Second Semester) (Information Technology) EXAMINATION, 2015

PROCESSOR ARCHITECTURE AND INTERFACING

(2008 PATTERN)

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

N.B. :— (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6** from Section I and Q. No. **7** *or* Q. No. **8**, Q. No. **9**, *or* Q. No. **10**, Q. No. **11** *or* Q. No. **12** from Section II.

(*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*) Draw and explain functional block diagram of 80386 in detail. [10]

(*b*) Explain the significance of the following signals of 80386 microprocessor : [8]

(1) $\overline{BE3}$-$\overline{BE0}$

(2) $\overline{LOCK}$

(3) D/$\overline{C}$

(4) $\overline{ADS}$

P.T.O.

Or

2. (*a*) Explain memory segmentation of 80386 microprocessor in real mode. [8]

(*b*) Differentiate between : [10]

(1) Memory mapped I/O and I/O mapped I/O

(2) 8086 and 80386.

3. (*a*) Explain any *four* addressing modes of 80386 with suitable examples. [8]

(*b*) Draw and explain control word format for I/O and BSR mode of 8255. [8]

Or

4. (*a*) What are the components of MS-DOS ? Explain any *four* DOS function with suitable examples. [8]

(*b*) What do you mean by Assembler Directives ? How is it different from instruction ? Explain with the help of examples. [8]

5. (*a*) With neat diagrams explain process of address translation in protected mode of 80386 when paging is enabled. [8]

(*b*) Write a short note on TLB. [8]

Or

6. (*a*) Write a short note on Virtual Memory of 80386 Microprocessor. [8]

(*b*) Draw and explain how 80386 processor translates logical address into linear address. [8]

SECTION II

7. (*a*) What is back link ? Where is it situated ? Explain its use in 80386 Microprocessor. [8]

(*b*) What are different classes of exception in 80386 ? Describe with suitable example. [6]

(*c*) Write a short note on Virtual Mode. [4]

Or

8. (*a*) What is multitasking ? Explain registers and descriptors are involved to support this feature in 80386. [10]

(*b*) How are interrupts handled in protected mode ? Explain with the help of neat diagram. [8]

9. (*a*) What are the different addressing modes of 8051 Microcontroller ? Explain with suitable examples. [8]

(*b*) Explain Data Memory organization of 8051 Microcontroller in detail. [8]

Or

10. (*a*) Describe different sources of interrupt and how these interrupts are handled in 8051 Microcontroller. [8]

(*b*) Describe register set of 8051 Microcontroller. [8]

11. (*a*) Describe features of Texas MSP 430. [6]

(*b*) Explain Timer Structure of 8051 Microcontroller and SFRs used in Timer Programming. [10]

Or

12. Explain in detail Serial Port of 8051 Microcontroller with the help of SCON. [16]