Total No. of Questions—8] [Total No. of Printed Pages—3

Seat
No.

[5252]-177

S.E. (Information Technology) (Second Semester)
EXAMINATION, 2017
PROCESSOR ARCHITECTURE AND INTERFACING
(2012 PATTERN)

Time : Two Hours   Maximum Marks : 50

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**, Q. No. **7** or Q. No. **8**.

   (ii) Neat diagrams must be drawn wherever necessary.

   (iii) Figures to the right indicate full marks.

   (iv) Assume suitable data if necessary.

1. (a) Explain any *four* programming tools needed to write an assembly
       language program.   [8]

   (b) Draw and explain the function of control register CR0 and
       CR3 of 80386.   [4]

Or

2. (a) What do you mean by assembler directive ? Explain the
       following assembler directive :
       (1) DW
       (2) MACRO
       (3) EXTRN
       (4) PUBLIC.   [8]

   (b) Draw the general segment descriptor format. Explain how
       granularity G bit affects the LIMIT Held.   [4]

P.T.O.

3. (*a*) Explain page translation process with diagram. Draw PTE and PDE formats. [8]

(*b*) How are interrupts/exception handled in protected mode of 80386 ? Explain using various gates format. [5]

Or

4. (*a*) What is a Task State Segment (TSS) and how docs it support Task Switching ? What is its site and content ? [8]

(*b*) How will you switch from real mode to protected mode and steps needed to set up the Protected mode before switching ? [5]

5. (*a*) Draw the basic memory structure for 64K program memory and 64k data memory and 4K byte of internal program memory and 256 bytes of internal data memory. [8]

(*b*) Explain the following instructions of 8051 :

(1) MUL AB

(2) ADD A,#10h [4]

Or

6. (*a*) Draw internal memory organization of 8051. Explain its distinct advantages and disadvantage. [8]

(*b*) State and justify addressing mode of the following 8051 instruction :

(1) MOVX A, @DPTR

(2) MOV R6, A. [4]

7. (*a*) List the interrupts support by 8051 with their vector addresses. Explain interrupt programming with the help of special function register IE. [7]

(*b*)   Explain special function register SCON and its utility for serial port of 8051 microcontroller.   [6]

Or

8.   (*a*)   Explain the following SFR of 8051 :

TMOD and TCON Register.   [7]

(*b*)   Draw Synchronous and Asynchronous serial communication format.   [6]