Seat
No.

[5459]-207

SE (Inform. Tech.) (Second Semester) EXAMINATION, 2018

PROCESSOR ARCHITECTURE AND INTERFACING

(2015 PATTERN)

Time : Two Hours　　　　　　　　Maximum Marks : 50

N.B. :— (i) Answer Q. **1** *or* Q. **2**, Q. **3** *or* Q. **4**, Q. **5** *or* Q. **6**, Q. **7** *or* Q. **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*) What are addressing modes of 80386 ? Explain any *three* with example.　　[6]

　　(*b*) Explain functionality of BUSY #,W/R#, ADS #, and NA# pins of 80386.　　[6]

Or

2. (*a*) Which are the different segments registers available in 80386 ? Explain their significance when 80386 is in Real mode and protected mode ?　　[6]

　　(*b*) Explain Control Registers CR0 to CR3 of 80386.　　[6]

3. (*a*) Which are the different ways 80386 can perform Task Switching operation ? Explain Task Switching operation with diagram. [6]

(*b*) Draw architecture diagram of 8051 and explain. [7]

Or

4. (*a*) Explain various registers used in Paging when 80386 is operating in protected mode. [7]

(*b*) Explain the significance of the following instructions of 8051 : [6]

MOV R0, #20H

MOVX @DPTR, A

DJNZ R1, label

5. (*a*) Write 8051 ALP (assembly language program) (with comments) to generate square wave of 2 kHz using internal Timer. Explain the calculations and significance of SFRs used for the same. (Assume Crystal Frequency : 11.092 MHz). [7]

(*b*) Write ALP (assembly language program) (with comments) to send FFH and 00 H data serially using 8051 serial communication mode. [6]

Or

6. (*a*) Explain vectored interrupts available in 8051 with diagram, their vectored addresses and their priority. How to change the priority of interrupts, explain with the help of Interrupt priority (IP) register. [7]

(*b*)   Write ALP to configure I/O ports of 8051 for the following configurations using bit/byte addressable instructions :   [6]

     1.   P2.0 to P2.3 to read the data from keyboard and P2.4 to P2.7 to write data to display

     2.   To generate square wave at P3.0

     3.   Alternate pins of Port P1 in lnput and Output mode.

7.   (*a*)   How 8051 is interfaced with LCD ? Explain with diagram and interfacing signals.   [6]

     (*b*)   How temperature sensor is interfaced with 8051 ? Explain with diagram and interfacing signals.   [6]

Or

8.   (*a*)   Draw interfacing diagram of 8051 with ADC. Explain with diagram and interfacing signals.   [6]

     (*b*)   Which are different operating modes of 8255 ? Explain in detail.   [6]