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

Seat
No.

                                                        [5152]-165

S.E. (Computer Engg.) (First Semester) EXAMINATION, 2017
MICROPROCESSOR ARCHITECTURE
(2012 PATTERN)

Time : Two Hours   Maximum Marks : 50

N.B. :— (i) Attempt 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 the test registers with their format.   [3]

    (b) Differentiate between Min mode and Max mode of 8086
         processor   [4]

    (c) Explain the following pins of 8086 :   [6]
         (i)   INTA#
         (ii) HLDA
         (iii) DT/R#

                               Or

2. (a) Specify size and function of IDTR.   [3]

    (b) Explain the hardware interrupt pins of 80386 processor. [4]

    (c) Draw and explain the functional pin diagram of 80386 DX
         processor.   [6]

3. (a) Draw and explain non-pipelined write cycle of 80386 DX. [5]

    (b) Explain HOLD/HLDA signal.   [4]

                                                        P.T.O.

(*c*) Explain with example difference between SUB and SBB instruction. [3]

Or

4. (*a*) Explain the following instructions : [5]

    (*i*) XOR

    (*ii*) TEST

    (*iii*) WAIT

    (*iv*) STD

    (*v*) SHLD.

(*b*) What do you mean by assembler directives ? Explain any *three* assembler directives used in 80386 programming. [4]

(*c*) Explain the assembly language programming steps. [3]

5. (*a*) Explain in detail multiprocessor architecture. [6]

(*b*) Give the parallel programming with diagram. [4]

(*c*) Briefly explain hybrid multicore architecture. [3]

Or

6. (*a*) Draw and explain the block diagram of 64-bit architecture. [6]

(*b*) Write a short note on multicore application design and implementation. [4]

(*c*) Explain front side and black side bus. [3]

7. (*a*) Explain the IA-32 basic execution environment. [5]

(*b*) State the two sub-modes of IA-32e mode. [4]

(*c*) What are the advantages of hyper threading technology ? [3]

Or

8. (*a*) Explain in detail microarchitecture code name Nehalem. [5]

(*b*) List the features of SSE2 extensions in Pentium 4 and Intel Xeon processor. [4]

(*c*) Explain the features of Virtualization Technology. [3]