Total No. of Questions—8] [Total No. of Printed Pages—4

Seat No.	

S.E. (Computer Engineering) (II Sem.) EXAMINATION, 2014

MICROPROCESSORS AND INTERFACING TECHNIQUES

(2012 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. :— (*i*) Answer total 4 questions **1** *or* **2**, **3** *or* **4**, **5** *or* **6**, **7** *or* **8**.

(*ii*) Neat diagrams must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

1. (*a*) Explain how logical to Linear address translation with TI = 0 is done in 80386DX for protected mode ? Draw neat diagram. [8]

(*b*) What are three components of COMMAND.COM ? Explain significance of each of them. [4]

Or

2. (*a*) Compare 8086, 80386 and i7 processor on the basis of architectural features. (Min. 6 points of comparison) [4]

P.T.O.

(*b*) Compare and contrast .COM and .EXE programs. [4]

(*c*) Draw architecture of 8259 PIC and state function of each block. [4]

3. (*a*) What is the need of sample and hold circuit ? Explain successive approximation ADC with block diagram. [4]

(*b*) Find out mode word and command word for the following configuration.

Mode Word — Baud rate 16x, 8 bit char length, no parity, with 2 stop bits. Control word — Transmit and receive enable, DTR — Ready, normal operation, Reset all error flags, no internal reset, Hunt mode disable. [4]

(*c*) Why DMA controlled data transfers are preferred over interrupt driven or program controlled ? Explain the use of HRQ and EOP signals. [4]

Or

4. (*a*) What is the sensor matrix mode of the IC 8279 ? Explain the function of the 8 × 8-bit RAM in this mode. [4]

(*b*) Explain the BSR and I/O mode word formats of the IC 8255. [4]

(*c*) Explain operation of 8253/54 in mode 3 with the help of timing diagram. [4]

5. (*a*) Draw the schematic of 8086 microprocessor operating in minimum mode, showing supporting chips required like clock generator, latches, buffers etc. Explain working of 8086 in minimum mode. [8]

(*b*) How does 8086 distinguish 8087 instructions from its own instructions ? [2]

(*c*) Explain the 8087 instructions with one example each :

(*i*) Data Transfer group

(*ii*) Constant returning group

(*iii*) Coprocessor control group. [3]

Or

6. (*a*) Draw and discuss the interface and interaction between 8086 and 8087. [7]

(*b*) Draw and explain the read cycle timing diagram of 8086 in minimum mode. [6]

7. (*a*) List and explain the features of Intel X58 chipset. [7]

(*b*) Discuss the following signals of Power Management interface of 82801JIR ICH :

(*i*) PLTRST#

(*ii*) THRM#

(*iii*) THRMTRIP#

(*iv*) PWROK [6]

Or

8. (*a*) Draw and explain block diagram of i5 motherboard. [7]

(*b*) Explain RAS and 'Intel QuickData Technology' features of Intel x58 express chipset. [6]