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

Seat
No.

[5152]-168

S.E. (Comp. Engg.) (II Sem.) EXAMINATION, 2017
MICROPROCESSOR AND INTERFACING TECHNIQUES
(2012 PATTERN)

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

N.B. :— (*i*) Answer total *four* questions 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.

1. (*a*) Draw architecture of 80386DX processor with neat sketch. List and explain different types of 80386 processors [6]

　　(*b*) Write a short note on TSR. [3]

　　(*c*) Explain different directives used within 80386 programming. List difference between Near and Far procedure. [3]

Or

2. (*a*) Draw the skeleton for .COM and .EXE file. Explain various terms related to .COM and .EXE file. [4]

　　(*b*) Write initialization instruction for 8259A to meet the following specifications : [4]

　　　　(*i*) Single level triggered mode

　　　　(*ii*) Call address interval of 4

　　　　(*iii*) Non-buffered

　　　　(*iv*) No special fully nested mode.

P.T.O.

(*c*) Explain the following 80386 addressing modes with appropriate examples : [4]

    (*i*)   Scaled Indexed Mode

    (*ii*)   Based Scaled Indexed Mode

    (*iii*) Based Scaled Indexed with Displacement Mode

    (*iv*) Direct Addressing Mode.

3. (*a*) Explain in detail different operating modes of 8251A. [6]

(*b*) Explain R to 2R ladder network with respective to DAC. [3]

(*c*) Explain the following control signals with respective to 8255 Mode1 (Strobed I/O Mode) [3]

    (*i*) $\overline{\text{STB}}$

    (*ii*)   IBF

    (*iii*) $\overline{\text{OBF}}$.

Or

4. (*a*) Draw and explain architecture diagram for 8279. [6]

(*b*) What are the different types of Data Communication ? List difference between synchronous and asynchronous communication. [3]

(*c*) Why DMA controlled data transfers are preferred over interrupt driven or program controlled ? Explain the use of HRQ and EOP signals. [3]

5. (*a*) Draw the schematic of 8086 microprocessor operating maximum mode, showing supporting chips required like clock generator, latches, buffers etc. Explain working of 8086 in Maximum mode. [7]

(*b*) Explain the following instruction of 8087 with example : [3]

(*i*) FSQRT

(*ii*) FPTAN

(*iii*) FLDPI

(*c*) Define the following terms : [3]

(*i*) Accuracy

(*ii*) Monotonicity

(*iii*) Offset error.

Or

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

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

7. (*a*) List and explain the features if Intel X58 Chipset. [7]

(*b*) Explain the features of 82801IJR I/O controller hub. [4]

(*c*) Draw basic blocks of Intel X58 chipset. [2]

Or

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

(*b*) Discuss the following signals of Power Management interface of 82801IJR I/O controller hub : [6]

(*i*) PLTRST#

(*ii*) THRM#

(*iii*) THRMTRIP#

(*iv*) PWROK.