TEC-504   193   **Printed Pages : 4**

Paper Code & Roll No. to be filled in your Answer Book

Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐

Odd Semester Examination-2016

B.Tech. (Semester-V)

MICROPROCESSORS AND CONTROLLERS

[Time : 3 Hours]   [Maximum Marks :100]

Note : Attempt **All** questions. Each question carries **equal** marks.

1.   Attempt **any four** questions :   [5x4=20]

(a)   Draw neat diagram of Internal architecture of 8085.

(b)   Explain Addressing modes of 8085 with example (at least one instruction to be given as an example).

(c)   Draw Register Organisation of 8086 microprocessor.

(d)   Give the answers in true or false with explanation for following instructions :

(i)   MOV Ax, 2050H

(ii)   MOV AL, 2050 H

TEC-504/940   (1)   [P.T.O.]

(iii)   MOV AL, [2050H]

(iv)   CLC

(v)   ADD AL, BL

(e)   Draw and explain how physical addresses are generated in 8086.

(f)   Write the function of the following pins:

(i)   INTR

(ii)   DT/R'

(iii)   BHE'

(iv)   DEN'

(v)   READY

2.   Attempt **any four** questions :   [5x4=20]

(a)   Draw block diagram of 8255 and write the name of each block and pins connected to microprocessor.

(b)   Explain Mode 2 of 8254 (timer) with neat clock diagram.

(c)   Draw Flag Register of 8085 and write function of each flag.

(d) Write addressing modes of 8051 microcontroller

(e) What is virtual memory and how it is addressed with microprocessor.

(f) What is segmentation and how it is formed? Explain the need and distribution of the memory and maximum size of the segment.

3. Attempt **any two** questions :　　　　　　[10x2=20]

(a) Draw block diagram of 8259 and explain how casecading is done and why is it required ?

(b) Draw and explain timing diagram of Memory read function of 8086 in minimum mode of operation.

(c) Draw bus transfer function of 8086 in minimum mode of operation with clear view of memory banks.

4. Attempt **any two** Questions :　　　　　　[10x2=20]

(a) Interface 128 KB memory with 8086 using proper diagram and addressing scheme. The Size of each chip of memory is 16 KB. Show the neat sketch with all address lines and necessary hardware with starting address of 30000 H.

(b) Explain the following related to 80186

    (i)   Differences between 8086 and 80186

    (ii)   Timer architecture of 80186

(c) Explain Protected virtual address mode of 80286.

5.   Attempt **any two** Questions :   [5x4=20]

    (a)   (i)   Describe how 80386 generates physical address in page mode.

          (ii)   Explain interrupts of 8051 microcontroller.

    (b)   (i)   Explain modem control signals of 8251 serial interface chip.

          (ii)   Differentiate between 80386 SX and 80386 DX.

    (c)   What is DMA? Explain working of DMA controller using suitable block diagram

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