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Printed Pages : 3

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BT-4 / M–15

MICROPROCESSORS & INTERFACING

Paper–ECE–216 E

Time allowed : Three hours]   *[Maximum marks : 100*

Note : *Attempt five questions in all, selecting at least one question from each section.*

Section–I

1. (a) Draw the functional block diagram of 8085 micro processor and explain.   10

   (b) Draw and explain the timing diagram of memory write cycle with example.   10

2. (a) Specify the contents of the registers, the flag status and addressing mode of the following instructions when they are executed.   10

   (i) MVI A, 00H

   (ii) MVI B, F8H

   (iii) MOV C, A

   (iv) MOV D, B

   (v) HLT

   (b) Write an assembly language program to convert an array of ASCII code to corresponding binary (hex) value. The ASCII array is stored starting from 4200H. The first element of the number of elements in the array.   10

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Section–II

3. (a) Draw the relevant pin diagram for 8086 Microprocessor and explain function of each pin in detail. 12

   (b) Write an ALP in 8086 to add two 16-digit packed BCD numbers. 8

4. (a) Generate the HEX codes for the following instructions

   (i) Mov [BP + SI], 7000h

   (ii) Mov Ax, [CX]

   (iii) Mov [9000], Cx. 12

   (b) Draw a timing, diagram for write cycle in MX mode of 8086 by introducing a wait state for 2ms in the processor cycle. 8

Section–III

5. (a) Draw and explain the pin configuration and the internal architecture of 8255. 10

   (b) A Push Button key-board is connected to port A and 7 segment LED display is connected to port B of 8255. Write a program to monitor the key-board to sense a key pressed and display the no. of key at 7 segment LED. Draw the interfacing circuit for the same. 10

6. (a) Show the interface connections of ADC to 8085. Draw and explain all the signals. 15

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(b) Write a BSR mode control word subroutine to set PC7 and PC3 and reset them after 10 milli seconds. The port address selected is 83h. 5

Section–IV

7. (a) Explain the features of 8253. Briefly explain its different modes of operation. 10

(b) Draw the block diagram of programmable interrupt controller and explain its operations. 10

8. (a) Explain the functions of Handshake signals. Explain an interrupt process and the difference between a maskable and non-maskable interrupt by using examples. 15

(b) Explain the functioning of Intel 8237 DMA controller. 5