

Roll No.

Total Pages : 3

45168

BT-5/D-25

MICROPROCESSOR AND INTERFACING

Paper : ES-301A

Time : Three Hours]

[Maximum Marks : 75

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

SECTION-I

1. (a) Draw and explain the block diagram of the 8086 microprocessor, clearly highlighting the functions of the Bus Interface Unit (BIU) and the Execution Unit (EU). 10
(b) Express how the physical address generated in 8086? 5
2. (a) Examine the Pin configuration for the 8086 processor and explain all the signals. 10
(b) How is the clock signal generated for 8086? Explain in detail. 5

SECTION-II

3. (a) Draw the timing diagram for Read and write cycle in maximum mode operation and explain? 8

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(b) Describe the maximum mode configuration of 8086 with a neat diagram and explain it in detail. 7

4. (a) Interface the 8086 microprocessor with two 16Kx8 EPROM chips and two 16Kx8 RAM chips. Draw the necessary block diagram for the support of your calculations? 10

(b) Give the cell structures of PROM memory? 5

SECTION-III

5. (a) Generate the HEX codes for the following instructions :

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(i) Mov CX, [D1]

(ii) Mov AX, [BX] [SI] [2000H] 8

(b) Define Addressing Modes and explain all the valid addressing modes for 8086 microprocessor? 7

6. (a) Write an 8086 assembly program to find the largest number from an array of numbers. 8

(b) Mention an example for the 8086 instructions: TEST, CMP, RCL, ROR, LEA, DAS, MOV 7

SECTION-IV

7. (a) Interface a typical 12-bit DAC with 8255 and write a program to generate a Square waveform of period 10 ms. The CPU runs at 4 MHz clock frequency. 8
- (b) Draw & explain the pin configuration and the internal architecture of 8255? Write a BSR mode control word subroutine to set bits PC7 & PC3 and reset them after 10 milli seconds. The port address selected is 83h. 7
8. (a) With the help of a block diagram explain the functioning of Intel 8259 chip? 7
- (b) Write down the steps involved when an interrupt INT 32h is encountered in the main program and calculate address of ISR for this interrupt? 8

EXAMKIT