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BT–5/D–21 **45107**

MICROPROCESSOR AND INTERFACING

Paper–ECE–301E

Time Allowed : 3 Hours] [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT–I

1. (a) Explain the Architecture of 8085 with the help of its internal block schematic. Write the flag register and explain each of the flags with an example. 8

   (b) What are the various addressing modes available in 8085 ? Explain with examples. 7

2. (a) What is meant by priority interrupts? Explain the Operation of different interrupts available in 8085, with the help of circuit diagram. 8

   (b) Draw the Pin configuration of 8085 up and explain the functioning of the Pins. 7

UNIT–II

3. (a) Generate the HEX codes for the following instructions : 8

   (i) Mov [BP + SI], 7799h

   (ii) Mov [0964], Cx.

   (b) Draw the functional block diagram of 8086 mp and highlight the functions of BIU and EU ? 7

4. (a) Explain the following instructions : 6

   (i) LDS (ii) XLAT (iii) AAA

   (iv) DAA (v) ROL (vi) LEA.

(b) Write an ALP to generate a square wave of frequency 500 Hz and Amp. 5V ? 9

UNIT–III

5. (a) Interface a typical 12-bit DAC with 8255 and write a program to generate a triangular waveform of period 10 ms. The CPU runs at 4 MHz clock frequency. 8

(b) Draw and explain the pin configuration and the internal architecture of 8255 ? Write a BSR mode control word subroutine to set bits PC7 and PC3 and reset them after 10 milli seconds. The port address selected is 83h ? 7

6. (a) Interface an 8255 with 8086 at 80H as an I/O address of Port A. Interface an alphanumeric display with the 8255. Write an ALP to display F on the screen? 8

(b) Draw and explain the timing diagram for RD operation of 8086 microprocessor in Minimum Mode? 7

UNIT–IV

7. (a) Draw the block diagram for 8259 chip and give its OCW's ? How an 8086 will respond if it receives an NMI interrupt signal, if it is responding an interrupt on INTR input from an interfacing device? 8

(b) Explain in detail the functioning of 8237 DMA controller. 7

8. Write brief notes on the following :

(a) 8086 Interrupts. 8

(b) Programmable Interval timer. 7

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