

**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