

B.E. / B.Tech. Electrical (Electronics & Power) Engineering (Model Curriculum) Semester-V
TE106 / MICRO1 - Microprocessors

P. Pages : 2

Time : Three Hours



GUG/S/25/13869

Max. Marks : 80

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- Notes :
1. All questions carry marks as indicated.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) List the basic control signals of UP 8085 and Explain them. How do generate MEMR, MEMW, IORD & IOWR signals from basic signals of UP 8085 using IC 74138. 8
- b) Enumerate the Flag register of UP 8085? Show the status of different flags after microprocessor performs addition of two data CBH and E9H 8

OR

2. a) Draw the timing diagram for the instruction STA, 7000 H. 8
- b) Explain the function of following pins of UP 8085 8
- | | |
|--------------|-----------|
| i) Reset out | ii) SID |
| iii) S0 & S1 | iv) Ready |
3. a) Explain the following instructions of UP 8085 8
- | | |
|------------|-------------|
| i) XCHG | ii) INR M |
| iii) SBB R | iv) POP PSW |
- b) Write a delay subroutine for UP 8085 to generate a delay of 1 msec. Assume clock frequency of 2 MHz 8

OR

4. a) Write a delay subroutine for UP 8085 to generate a delay of 100 msec using a loop within a loop technique. Assume clock frequency of 2 MHz 8
- b) Write an ALP for 8085 to arrange an array in ascending order. The length of the array is at memory location 414F H. The array starts from memory location 4150 H. 8
5. a) Compare I/O mapped I/O and memory mapped I/O 4
- b) Interface 16Kx8 EPROM and 16Kx8 RAM to UP 8085. The available memory is 8Kx8 EPROM and 8Kx8 RAM. The EPROM address should start from memory location 0000H. Draw the complete interfacing diagram 12

OR

6. a) Draw and explain HW interrupt structure of UP 8085 8
- b) Write an ALP for MP 8085 to generate a square wave of time period 10 msec having 20% duty cycle on SOD pin. Write the delay subroutine also. Assume clock frequency of 4 MHz 8

7. a) Interface an 8-bit ADC 0800 to UP 8085 in I/O mapped I/O. Write an ALP to take analog data as input at an interval of 1 msec, convert it to Digital and store at memory location C200H **8**
- b) Interface 7-segment display to UP 8085 using IC 8255. Write control word format of IC 8255 to initialize the 7-segment display **8**

OR

8. a) Interface 8255 PPI with UP 8085 such that the port addresses start from 60H. Draw the complete interfacing diagram. **8**
- b) Draw and Explain frequency measurement of AC signal using UP 8085. **8**
9. a) Describe Mode-3, Mode-4 and Mode-5 of IC 8254 along with waveform. **8**
- b) Write a subroutine for UP 8085 to initialize counter 2 of IC 8254 in mode 0 with a count of 50,000. The subroutine should also include reading counts on the fly; when count reaches zero, it should return to the main program. **8**

OR

10. a) Explain the IC 8254 CWR format and set up the 8254 as a square wave generator with 1 ms period if the input frequency to the 8254 is 1 MHz **8**
- b) Draw and explain block diagram of Intel 8254 PIT in detail **8**
