B. CSE 2ND YEAR 2ND SEMESTER EXAMINATION 2019

MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING

Time: Three Hours | Full Marks: 100

Different parts of the same question must be answered ***TOGETHER***

Answer any one from the following Q1 and Q2:

1. a) What is addressing mode? Describe different addressing modes of 8085 μP with examples. 2+10

   b) Let the instruction MVI A, 15_H is stored from m/m location 2500_H. Write the sequence of steps of fetch cycle and execution cycle to execute the instruction. 5

   c) Write the functions of the (i) MOV A, M (ii) LXI H, 2050_H (iii) LHLD 3000_H and (iv) RAR instructions with proper examples. 2+2+2+2

2. a) Describe the different operating modes of the 8255 PPI. 15

   b) Describe with a schematic diagram the sequence of steps for asynchronous serial data transfer between μP and peripheral using a UART. 10

Answer the following Q3:

3. (a) Interface 6K memory as two memory chips (modules) of 4K (M1) and 2K (M2) beginning at address 4000_H using suitable decoders. Explain its address decoding technique and find its RAM address range. Assume/generate appropriate signals and pins. 10+5

   b) What is partial decoding? Explain foldback memory using the data given in Q3. (a). 5+5

Answer any two from the following Q4 – Q6:

4. a) Describe the sequence of steps required for data transfer between microprocessor and an I/O device with appropriate schematic diagram. 10

   b) Name the different types of hardware and software interrupts? 3+2

   c) How is ISR executed when a vectored interrupt occurs? 5

   d) Write the differences between m/m mapped I/O device and I/O mapped I/O device. 5

5. a) There are N (8-bits) data bytes stored from m/m location 2500_H. The value of N is stored in 2000_H. Write an 8085 program to copy the even and odd integers into the m/m locations starting from 5050_H and 6050_H, respectively. 13

   b) There are N bytes stored from m/m location 2500_H. The value of N is stored in 2400_H. Write an 8085 program to interchange the bits D_5 D_4 with D_3D_2, respectively and store them into the m/m locations starting from 2600_H. 12

6. b) N bytes are stored from m/m location 2500_H. Write a program (with comments) to find the sum of these N bytes after complementing the D_0 and D_7 bits. The value of N is stored in 2200_H. Store the result in locations 2300_H and 2301_H. 13

   b) Write a delay program for 1.0 ms in a 2 MHz microcomputer system. 12