17443

21415

3 Hours / 100 Marks   Seat No.

Marks

1. **(A) Attempt any SIX :**   **12**

   (a) Which type of memory available in 8155 ? Also state its capacity.

   (b) What is bus ? What are different types of buses used in Microprocessor ?

   (c) How the port 'C' is divided in Group A and Group B of 8255 ?

   (d) What is fetching and execution operations of Microprocessor ?

   (e) Compare RIM and SIM instructions (any two).

   (f) Compare PUSH and POP instructions.

   (g) List two differences between static RAM and dynamic RAM.

   (h) Draw pin configuration of 8255A.

   (i) With the help of one example in each case explain the effect of the following instructions in 8085

      (i) DAD B

      (ii) DAA

   (B) Attempt any TWO :   **8**

   (a) What is Microprocessor ? State any four applications of Microprocessor.

   (b) Sketch and explain the timing diagram of the instruction MVI A, 08H.

   (c) LED is connected to SOD line of 8085. Write the instruction to 'ON' the LED.

P.T.O.

2. **Attempt any FOUR :** 16

(a) What is stack ? Explain working of stack in detail.

(b) Define addressing mode ? Explain various addressing modes related to 8085 with suitable examples.

(c) How SOD and SID pins can be used as a single bit output and input ports respectively ?

(d) State any four features of 8085.

(e) Write a program using the ADI instruction to add the two hexadecimal numbers 3 AH and 48 H and to display the answer at an output port.

(f) Draw the block diagram of 8255, and explain the function of Group A port bits and Group B port bits.

3. **Attempt any FOUR :** 16

(a) What operations can be performed by each of the following instructions ?
   (i) MVI A, data
   (ii) MOV C, A
   (iii) XRI 8 bit
   (iv) ADDR

(b) Write the priorities of hardware interrupts of 8085 microprocessor. Also write their vector addresses.

(c) What is demultiplexing of the address and data bus ? Which signal is used to demultiplex the address and data bus ? Describe with the help of neat diagram.

(d) State different operating modes of 8255. Explain mode 2 in detail.

(e) Draw the neat labelled minimum system using 8085, 8155 and 8355.

(f) Compare INTR interrupt with RST 6.5 interrupt on the basis of operation, advantages and disadvantages.

4. **Attempt any FOUR :** 16

   (a) Interface 8 K RAM to 8085. State the memory map.

   (b) Explain the control word format of 8255 with suitable diagram.

   (c) Interface the ADC to 8055 and write assembly language program to convert analog data to digital data.

   (d) Interface 8255 to 8085 in I/O mapped I/O. Write the addresses of 8255.

   (e) What do you mean by timing diagram ? Define instruction cycle, machine cycle and T-state.

   (f) Differentiate between I/O mapped I/O and memory mapped I/O (any four points).

5. **Attempt any FOUR :** 16

   (a) Write the timer modes of 8155 and explain any one with the timing diagram.

   (b) Draw a neat labelled block diagram of 8155.

   (c) Write the initialization instruction for 8255 in mode 'O' to configure Port A as a input and Port B as a output. Write instructions to read the content of Port A and display it on Port B.

   (d) Draw the neat labelled block diagram of 8355.

   (e) Write the assembly language program to arrange the data stored in memory location from 3000 H to 3009 H in accending order.

   (f) Compare EI and DI instructions.

6. **Attempt any TWO :** 16

   (a) Describe the functions of following blocks of 8085 microprocessor :
       (i) General purpose registers
       (ii) ALU
       (iii) Timing and control unit
       (iv) Instruction decoder and machine cycle encoding.

(b) Draw the flowchart and write a program to transfer the block of 30 data bytes stored in memory from location 9000 H; to the memory locations starting from 9040 H.

(c) Draw a diagram to interface stepper motor to 8085 microprocessor using 8255 PPI, write an 8085 assembly language program to rotate the stepper motor in clockwise direction continuously.

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