

17443

15116

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.  
 (2) Answer each next main Question on a new page.  
 (3) Illustrate your answers with neat sketches wherever necessary.  
 (4) Figures to the right indicate full marks.  
 (5) Assume suitable data, if necessary.  
 (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. a) **Attempt any SIX of the following:** **12**
- (i) What is accumulator? State its function.
  - (ii) List the four features of 8085.
  - (iii) Give any two examples of direct addressing mode.
  - (iv) Define register addressing mode.
  - (v) List the 8085 interrupts according to priority.
  - (vi) State the capacity of memory available in 8155.
  - (vii) Write function of any two pins of 8155.
  - (viii) Classify the data transfer techniques.
- b) **Attempt any TWO of the following:** **8**
- (i) Describe the use of SOD and SID pins with the help of example.
  - (ii) Compare 8155 and 8255 (any four points)
  - (iii) Explain the interfacing of seven segment display with 8085.

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**Marks**

- 2. Attempt any FOUR of the following: 16**
- Draw flag register of 8085 and explain all the flags.
  - With an example of each explain any four arithmetic instructions.
  - Draw timing diagram of MOV A, B instruction.
  - Describe the format of RIM and SIM instruction.
  - Describe the memory mapped I/O technique of interfacing.
  - Draw block diagram of 8355.
- 3. Attempt any FOUR of the following: 16**
- With the help of diagram explain the de-multiplexing of  $AD_0-AD_7$  bus.
  - Explain any four addressing modes by giving an example of each.
  - Write an assembly language program to multiply two 8-bit numbers.
  - Write a time delay subroutine using 8-bit register. Calculate the delay generated. Assume suitable count in register.
  - Interface 8K ROM to 8085. State the memory map.
  - Describe the DMA controlled data transfer technique.
- 4. Attempt any FOUR of the following: 16**
- Explain the following blocks of 8085:
    - ALU
    - Temporary register
    - Interrupt control
    - Timing and control unit
  - Explain LDA address and STA address instruction by giving two examples of each.
  - Write a program to add three 8-bit numbers available at memory location 1200H, 1201H and 1202H.
  - Describe the I/O mapped I/O interfacing technique.
  - Explain the control word format of 8255.
  - With the help of diagram explain the ADC interfacing with 8085.

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**Marks****5. Attempt any FOUR of the following:****16**

- a) Generate the various control signals using gates.
- b) Write an assembly language program to find largest and smallest number from a data block of 8 numbers. All numbers are 8 bit.
- c) Explain the process of interrupt handling in 8085.
- d) Write the different steps performed to interface RAM/ROM chips with 8085.
- e) Draw block diagram of 8255 and explain the different blocks in brief.
- f) Compare 8255 with 8355 (any four points).

**6. Attempt any FOUR of the following:****16**

- a) Explain the function of program counter and stack pointer in 8085.
  - b) Explain any four branching (conditional) instructions in 8085 by giving an example of each.
  - c) Write the different advantages of subroutines.
  - d) Write instruction to 'ON' and 'OFF' the LED connected to SOD pin of 8085.
  - e) Explain BSR mode of 8255.
  - f) Draw interfacing diagram of 8155 with 8085. Explain in brief.
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