



21718

17443

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are **compulsory**.*
 - (2) *Illustrate your answers with neat sketches **wherever** necessary.*
 - (3) *Figures to the **right** indicate **full** marks.*
 - (4) *Assume suitable data, if **necessary**.*
 - (5) *Use of Non-programmable Electronic Pocket Calculator is **permissible**.*
 - (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) State any four features of 8085.
 - ii) Explain indirect addressing mode with one example.
 - iii) State the function of stack.
 - iv) Which type of memory is available in 8155 ? State its capacity.
 - v) Explain how port C is divided in group A and group B of 8255.
 - vi) State the necessity of demultiplexing of low order address/data bus in 8085.
 - vii) Define machine cycle.
 - viii) Classify the data transfer techniques.
- b) Attempt **any two** of the following : **8**
- i) Interface 4 k byte of RAM to 8085. Draw the memory map.
 - ii) Draw the block diagram of 8255.
 - iii) Draw the neat labelled minimum system using 8085, 8155 and 8355.
2. Attempt **any four** of the following : **16**
- a) Generate the control signals, memory read, memory write, I/O read and I/O write using decoder.
 - b) Write an assembly language program to obtain two's complement of 8-bit number.
 - c) Draw the timing diagram of memory read machine cycle.
 - d) Write the priorities of hardware interrupts of 8085 along with their vector addresses.
 - e) Differentiate between I/O mapped I/O and memory mapped I/O (any four points).
 - f) State any 4 important features of 8355.

P.T.O.



3. Attempt **any four** of the following :
- Draw the flag register of 8085 and explain the function of each bit.
 - Write assembly language program to add two 8-bit numbers.
 - Draw the timing diagram of STA 7000 H instruction.
 - Explain the function of EI and DI instruction.
 - Write an assembly language program to receive 8 bits serially on SID line. Store the byte at 2000 H memory location.
 - Draw the interfacing diagram of ADC to 8085 through 8255.
4. Attempt **any four** of the following :
- Draw the architecture of 8085.
 - Write assembly language program to sort five numbers in ascending order.
 - Write an ALP to add two BCD nos.
 - State the function of SID and SOD lines and give two advantages of serial communication.
 - Describe the BSR mode of 8255.
 - Describe the DMA controlled data transfer technique.
5. Attempt **any four** of the following :
- State the function of program counter and stack pointer.
 - Write two instructions each of register addressing mode and immediate addressing mode.
 - Draw the format of SIM instruction and explain the function of each bit.
 - What is the use of memory mapping ? Draw memory map to Interface 4 KB RAM and 4 KB ROM with 8085 μ p.
 - Differentiate between 8155 and 8255 (any 4 points)
 - Draw and explain the control word format of 8255.
6. Attempt **any four** of the following :
- Draw the interfacing of DAC with 8085 through 8255. Write the assembly language program to generate square waveform using DAC.
 - Write an assembly language program to exchange lower and upper nibble of a byte.
 - Differentiate between maskable and non-maskable interrupts (any 4 points).
 - Describe the following blocks of 8085 i) ALU, ii) Timing and control.
 - Write an assembly language program to generate a square wave on SOD line.
 - Draw the block diagram of 8155.
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