



17443

16172

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** :

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- a) What is fetching and execution operations of microprocessor ?
- b) Why it is necessary to multiplex data and address bus in 8085 ?
- c) State the number of machine cycles and T-states required for the following instructions.
 - i) LDA 2500 H
 - ii) SUBM
- d) What is the necessity for interrupts controller ?
- e) Define : Machine cycle.
- f) Draw pin configuration of 8255A.
- g) How the port 'C' is divided in Group A and Group B of 8255 ?
- h) Classify the data transfer techniques.

B) Attempt **any two** :

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- a) Draw the architecture diagram of 8085 microprocessor.
- b) Write a program to get square of number 08H and the result must be in BCD format. Store the result into HL register pair.
- c) Define handshake signals. Draw interfacing of 8155 port A in input mode with handshake signals.

2. Attempt **any four** :

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- a) Draw the timing diagram of the instruction MVIA, 08H.
- b) Describe the functions of the following blocks of 8085 microprocessor.
 - i) General purpose registers
 - ii) Arithmetic logic unit.
- c) What is subroutine ? List any two advantages of subroutine. State any two instructions related to subroutine.
- d) How SOD and SID pins can be used as a single bit output and input port respectively ?
- e) What is BSR mode of 8255 ? Write control word to set PC3 bit.
- f) Explain DMA controlled data transfer technique.

P.T.O.



- 3. Attempt any four :** **16**
- With the help of diagram, explain how control signals are generated in 8085.
 - Write a program to add 98H and 9AH. The number 98H is in the memory location 2501 and 9AH is in 2502 H and the results are to be stored in 2503 and 2504 H.
 - Draw and explain the format of SIM instruction.
 - State what is memory mapped I/O ? State its features (any two points).
 - Compare features of 8155 and 8255 (any four points).
 - Draw and explain the interface diagram of DAC with 8085 microprocessor.
- 4. Attempt any four :** **16**
- State any eight features of 8085.
 - With example describe any four addressing modes of 8085.
 - Write a subroutine for 8085 to generate time delay of 100 μ sec (assume 320 nsec clock cycle).
 - Draw the block diagram of 8355.
 - Which control signals are necessary in the memory mapped I/O ? Explain.
 - Interface the ADC to 8085 and write assembly language program to convert analog data to digital data.
- 5. Attempt any four :** **16**
- Describe any two conditional CALL and any two conditional JUMP instructions.
 - Write the assembly language program to arrange the data available in memory location from 2000 H to 2009 H in descending order.
 - Describe vectored interrupts of 8085.
 - Compare I/O mapped I/O and memory mapped I/O (any four points).
 - Draw the neat labelled minimum system using 8085, 8155.
 - Write timer mode of 8155 and explain any one with timing diagram.
- 6. Attempt any four :** **16**
- Write the functions of following pins of 8085 : HOLD, ALE, READY and reset.
 - Write a program to transfer a block of data. The data is stored in memory from C550H to C55FH. The data is to be stored from C570H to C57FH in reverse order.
 - Explain what operation will take place when the following instructions are executed.

i) PUSH	ii) POP
iii) CALL	iv) RETURN
 - Draw the diagram showing interface of 2 kbyte RAM and EPROM chips with 8085 microprocessor. State the memory map.
 - State different operating modes of 8255. Explain mode-2 in detail.
 - Draw interfacing of 8255 with 8085 microprocessor and explain it.
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