

Seat No.: _____

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GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(OLD) – EXAMINATION – SUMMER 2019****Subject Code:140701****Date:13/05/2019****Subject Name: Microprocessor And Interfacing****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Draw and Explain the functional block diagram of internal architecture of 8085 and explain its working. **7**

(b) Explain following instructions **7**

- | | |
|--------------|---------|
| (1) PUSH PSW | (5) RIM |
| (2) XCHG | (6) STA |
| (3) LDAX | (7) RAL |
| (4) DAA | |

Q.2 (a) Explain addressing modes of 8085 by giving the suitable examples. **7**

(b) Explain the execution of STA 3000H instruction with neat timing diagram. **7**

OR

(b) Draw and explain timing diagram of Memory Read and Memory Write cycle. **7**

Q.3 (a) Explain memory mapped I/O and I/O mapped I/O. **7**

(b) What is Stack pointer? Explain PUSH and POP instructions with suitable examples. **7**

OR

Q.3 (a) Explain the De multiplexing the Bus AD₇-AD₀ and also explain the generation of the Control signals. **7**

(b) What is Interrupt? Explain 8085 Vectored Interrupts in detail. **7**

Q.4 (a) Write a programme to find a square of a number from memory location D100H and store the result from location D200H. **7**

(b) Write a programme to count the number of ones (1's) in a byte stored in the H register and store the count in E register. **7**

OR

Q.4 (a) Write a programme to sort the given N number from a block in ascending order. Assume that the memory block begins at D000H. **7**

(b) Write a programme to calculate the sum of series of even numbers. Assume that the length of the series is stored at memory location D000H and the series itself begins at memory location D0001H. Store the result at memory location E000H. **7**

Q.5 (a) Draw and explain the functional block of IC 8255A and also discuss the operating modes and control word format of 8255A. **7**

(b) Explain 8254 Programmable Interval Timer with necessary block diagram. **7**

OR

Q.5 (a) Draw and Explain 8237 DMA controller. **7**

(b) Explain 8279 Programmable Keyboard/Display Interface. **7**
