

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (OLD) - EXAMINATION – SUMMER 2018

Subject Code:140701

Date:19/05/2018

Subject Name:Microprocessor And Interfacing

Time:10:30 AM to 01:00 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 block diagram of 8085 microprocessor architecture. **07**
(b) Explain the working of rotate instructions of 8085 with proper example in each case. **07**
- Q.2** (a) What is addressing mode? Explain all addressing modes of 8085 processor. **07**
(b) Draw and explain timing diagram of instruction MOV C,A stored in location 2005H, and its opcode is 4F H. **07**

OR

- (b) Draw and explain timing diagrams of Memory Read and Memory Write cycle. **07**
- Q.3** (a) What is Interrupt? How many interrupts are available in 8085? Write interrupt vectored table for 8085. **07**
(b) Consider a system in which 32kb memory space is implemented using four numbers of 8kb memory. Interface the EPROM and RAM with 8085 processor. Write address range for both chips showing address decoding logic. **07**

OR

- Q.3** (a) How address and data lines AD0-AD7 of 8085 is demultiplexed? Draw the diagram of generation of control signals in 8085. **07**
(b) Write a program to count continuously in hexadecimal from FFH to 00H in a system with a 0.5 μ s clock period. Use register C to set up a one millisecond (ms) delay between each count and display the numbers at one of the output port. **07**
- Q.4** (a) What is stack? Explain stack operations in 8085 using PUSH and POP operations with neat sketches. List out all stack related 8085 instructions. **07**
(b) Six data bytes of data are stored in memory locations starting at 2000H. Write 8085 program to add all data bytes. Use register B to save carries generated. Display the sum at two output port. **07**
Data: D2, 23, 04, 25, 0A, 70
- Q.4** (a) Draw and explain block diagram of 8259A Programmable Interrupt Controller **07**
(b) A string of readings is stored in memory locations starting at XX70H and the end of string is indicated by byte 0DH. Write 8085 program to check each byte in the string and save the bytes between the range of 30H to 39H in memory location starting from XX90H. **07**
Data: 35, 2F, 30, 39, 37, 7F, 31, 0D

- Q.5** (a) Draw and explain block diagram of 8254 Programmable Interval Timer. **07**
(b) Draw the control word format of 8255 for I/O mode and explain it. **07**

OR

- Q.5** (a) Explain the SIM and RIM instructions of 8085 in detail. **07**
(b) What is USART? Draw the functional block diagram of 8251 and explain the function of each block. **07**
