Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019

Subject Code: 2141001 **Date: 10/12/2019**

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.**

Q1	**(a)**	Draw and explain flag format of 8085 microprocessor	**3**
	(b)	With the help of circuit diagram, explain generation of various control signals in 8085 microprocessor.	**4**
	(c)	Explain the following instructions of 8085 microprocessor 1. CALL 2. XCHG 3. STA 4. LXI 5. ANI 6. XRA 7. OUT	**7**
Q2	**(a)**	Explain various addressing modes of 8085 microprocessor	**3**
	(b)	Classify 8085 microprocessor instruction set.	**4**
	(c)	Interface two 2732 EPROM and two 27128 RAM with 8085 microprocessor. Use 3:8 decoder for interfacing. Show necessary memory map of the interfacing.	**7**
		OR	
	(c)	Draw and explain the functional block diagram of the 8085 microprocessor.	**7**
Q3	**(a)**	List down the steps to be executed before executing an interrupt in 8085 microprocessor	**3**
	(b)	Write an assembly loop to generate delay of 1 second in 8085 operating at crystal frequency of 8MHz.	**4**
	(c)	Draw the timing diagram for IN 8bit instruction. List down various machines cycles of IN instruction	**7**
		OR	
Q3	**(a)**	Differentiate I/O mapped I?O and Memory mapped I/O	**3**
	(b)	Write an assembly loop to generate delay of 750ms in 8085 operating at crystal frequency of 6MHz.	**4**
	(c)	Draw the timing diagram for STA 16bit instruction. List down various machines cycles of STA instruction	**7**
Q4	**(a)**	Write a note on working with Stack Pointer in 8085 Microprocessor	**3**
	(b)	Write a program to generate the Fibonacci sequence numbers. Generate 14 numbers of sequences and store it in memory.	**4**
	(c)	Set of 10 data bytes are stored at C500H. End of the data is indicated by FFH. Write a program that check each data byte and transfers only those data byte that are less than (60)d and greater than (20)d to a new memory location starting from C550H.	**7**
		OR	
Q4	**(a)**	Explain CALL and RET instruction.	**3**
	(b)	Write a program to find whether a given number is prime or not. Store the result at D000H	**4**
	(c)	The following string is stored at memory location starting from 9100H	**7**

"THE QUICK BROWN FOX JUMPS OVER LAZY DOG."

The String is stored in the ASCII format and is terminated with 00H. Write a program to count the occurrences of each character and store the result at location 9200H onwards

Q5	**(a)**	List down features of 8086 microprocessor	**3**
	(b)	Draw and explain block diagram of 8259 interrupt controller IC	**4**
	(c)	Draw and explain block diagram of 80186 microprocessor	**7**

OR

Q5	**(a)**	List down the advantages of segmentation in 8086 microprocessor	**3**
	(b)	Draw and explain block diagram of 8255 peripheral interface IC	**4**
	(c)	Draw and explain block diagram of 80486 microprocessor	**7**

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