Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC– SEMESTER IV– • EXAMINATION – SUMMER - 2016

Subject Code: X40901 **Date:18/11/2016**

Subject Name: Micro Processor & Interfacing

Time:02:30 PM to 5:00 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)**	Explain (i) ALU (ii) Program counter (iii) Instruction decoder Explain addressing modes of 8085 microprocessor with example.	**07**
	(b)	Draw and explain the block diagram of 8085 microprocessor architecture.	**07**
Q.2	**(a)**	Draw the timing diagram of MVI A,50H. Instruction is stored at memory location C051H. And find instruction cycle time, Machine cycle time and T-state time if clock frequency is 2MHZ.	**07**
	(b)	A set of current readings is stored in memory locations starting at XX50H. The end of the data string is indicated by the data byte FFH. Add the set of readings. The answer may be larger than FFH. Store the answer in the memory locations XX70 andXX71H. [Data(H) 32,52,62,72,FF]	**07**
		OR	
	(b)	Design a 4 digit Up counter to count from 0000 to FFFF in HEX with 500 ms delay between each count. Display the count at an output port1.	**07**
Q.3	**(a)**	Explain (i)PCHL (ii) LHLD (iii) DAD (iv) XTHL	**04**
		Compare memory mapped I/O and peripheral mapped I/O.	**03**
	(b)	Explain need and list of branching instructions in 8085 .Write a program to find whether the given number stored in memory location D000H is positive, negative or zero. If number is positive place 00H, If number is negative place 01H and if number is zero place 02H in memory location D050H.	**07**
		OR	
Q.3	**(a)**	Explain (i) Ready (ii) INTR (iii) ALE (iv) TRAP.	**04**
		List various control signals in 8085. How do we generate them? Give their importance.	**03**
	(b)	What is subroutine? How it is called? State advantage of subroutine. Write a 200ms time delay subroutine using register pair BC. Clear the Z flag without affecting any other flags in the flag register and return to the main program. Assume clock frequency of 2MHZ.	**07**
Q.4	**(a)**	List and Explain categories of 8085 instructions that manipulate data.	**07**
	(b)	Write an 8085 program to copy block of ten numbers starting from location E050h to locations starting from F050h.	**07**
		OR	

Q.4	**(a)**	Point out the valid and invalid instructions. Correct the invalid ones. LDAX AF LDA BD MOV 05 ANI 0B MOV F,L RAL 02 STA FF00H	**07**
	(b)	Write an 8085 program to count the number of odd numbers in a block of fifty Numbers stored at starting location E0E0H. Store your answer at F0F0H.	**07**
Q.5	**(a)**	What do you mean by direct memory transfer? Explain 8257 DMA controller with block diagram	**07**
	(b)	Draw logic block diagram of the 8279 and explain major section of it.	**07**
		OR	
Q.5	**(a)**	List major components of the 8259A interrupt controller and explain their functions.	**07**
	(b)	Draw and explain the block diagram of 8255A programmable peripheral port.	**07**

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