Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER 2013

Subject Code: 140701 Date: 07-06-2013

Subject Name: Microprocessor and Interfacing

Time: 10:30am – 01:00pm 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 the internal block diagram of microprocessor 8085 and explain the working of (i) Program Counter register (ii) Flag register with Bit significance.	**07**
	(b)	Explain the Functions of the following pins of Microprocessor 8085 (i) ALE (ii) S0,S1(iii) INTR,INTA (IV) SID,SOD	**07**
Q.2	**(a)**	What multiplexing? How it is done in microprocessor 8085 for address and data bus? Explain with neat diagram.	**07**
	(b)	What is Stack and Stack pointer register? Explain the working and use of stack in subroutine program.	**07**
		OR	
	(b)	Explain the different addressing modes available in 8085 assembly language programming with example.	**07**
Q.3	**(a)**	Compare memory mapped I/O with I/O mapped I/O	**07**
	(b)	Draw the diagram for interfacing 8KB of ROM and 8KB of RAM with microprocessor 8085 and also explain the number of pins used for such interfacing. The starting address for ROM should be 0000H and starting address for RAM should be 8000H	**07**
		OR	
Q.3	**(a)**	What are interrupts? List and explain the interrupt available in microprocessor 8085?	**07**
	(b)	Explain the execution of STA 3000H instruction using Timing diagram.	**07**
Q.4	**(a)**	Write an Assembly Language Program (ALP) to find the 2's complement of a number stored in Memory location A000 H store the result in B000H.	**07**
	(b)	Write and ALP to add two 16 bit numbers Assume that the answer does not generate carry.	**07**
		OR	
Q.4	**(a)**	Write and ALP to design a delay of 500 ms. Make necessary assumptions and write the assumptions clearly.	**08**
	(b)	Expalin the following instructions of microprocessor 8085 (i) LHLD (ii) DAD (iii) DAA	**06**
Q.5	**(a)**	Draw the internal block diagram of 8255 and explain the functions of each block in details.	**07**
	(b)	Discuss the main applications of 8255 and working of 8255 in various modes.	**07**
		OR	
Q.5	**(a)**	Explain control word format and different modes of 8254.	**07**
	(b)	What is USART? Draw the functional block diagram of 8251 and explain function of each block.	**07**

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