Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV EXAMINATION – WINTER 2015

Subject Code: 140701 **Date:22/12/2015**

Subject Name: Microprocessor and Interfacing

Time: 02:30pm to 05:00pm **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)**	Answer the following: (i) Why is data bus bidirectional in 8085? (ii) Why are Program Counter and Stack Pointer registers 16-bits?	**07**
	(b)	Answer the following: (i) How many address lines are needed on 2K (2048) bytes of memory? Explain. (ii) If the memory chip size is 1024x4 bits, how many chips (ICs) are required to make up 8K (8096) bytes of memory? Explain	**07**
Q.2	**(a)**	Compare memory mapped I/O and I/O mapped I/O.	**07**
	(b)	Explain architecture of 8085 microprocessor with block diagram.	**07**
		OR	
	(b)	Explain addressing modes available in 8085 assembly language with example.	**07**
Q.3	**(a)**	Explain RIM and SIM instructions.	**07**
	(b)	Draw and explain block diagram of 8259A interrupt controller.	**07**
		OR	
Q.3	**(a)**	What is interrupt? Explain interrupts available on 8085.	**07**
	(b)	Explain conditional and unconditional branching instructions with example.	**07**
Q.4	**(a)**	Write an Assembly Language Program for delay of 600 millisecond. Make necessary assumptions and write assumptions clearly.	**07**
	(b)	Explain following instructions: (1) LDAX D (2) DAD B (3) PCHL (4) DAA (5) LDA 2040H (6) XCHG (7) EI	**07**
		OR	
Q.4	**(a)**	What is direct memory transfer? Explain 8257 DMA controller with block diagram.	**07**
	(b)	Write a program to find negative numbers in given set of data stored from 8000h to 800Fh. Store all negative numbers at memory location starting from A030h.	**07**
Q.5	**(a)**	Write short note, with block diagram, on Programmable Peripheral Interface.	**07**
	(b)	Write a program to generate a rectangular wave with 200 Microseconds ON period and 400 Microseconds OFF period. Make necessary assumptions and write them clearly	**07**
		OR	
Q.5	**(a)**	Write short note on keyboard/display interface (8279) with block diagram.	**07**
	(b)	A set of numbers are stored in memory locations starting from C050H. The end of the data string is indicated by the data byte 00H. Add the numbers. The answer may be larger than FFH. Store the result in the locations D070H and D071H.	**07**

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