Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Remedial Examination April 2010

Subject code: 710302 **Subject Name: Advance Microcontroller**

Date: 07 / 04 /2010 **Time: 12.00 noon – 02.30 pm**

Total Marks: 60

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write the equation for expressing processor performance. Explain the philosophy of CISC and RISC processor in context of equation.	**06**
	(b)	Explain the bank – switching in PIC18	**06**
Q.2	**(a)**	Explain the term little endian and big endian in context of memory access. Give one example of microcontroller family implementing each one of the mechanism.	**06**
	(b)	Differentiate between Van – Neumann and Harvard Architecture.	**06**
		OR	
	(b)	Explain stack operation in PIC18XXX.	**06**
Q.3	**(a)**	Explain function of GOTO instruction. How the 20bit address value is used to map 2M address space?	**06**
	(b)	Explain concept of pipelining used in PIC18XXX.	**06**
		OR	
Q.3	**(a)**	Explain conditional branch instructions in PIC18XXX.	**06**
	(b)	Explain function of instruction decoder in microcontroller.	**06**
Q.4	**(a)**	Write a code to read the data from memory location 30h four times and add it with content of 20H on every read and store the result at the end of the sixth read in WREG.	**06**
	(b)	Write a program to move data AAh in file register 125H and then exchange data with file register 120H	**06**
		OR	
Q.4	**(a)**	Write a program to add data array stored from file register 020h to 030h. Store result's lower byte in 040h and upper byte in 041h	**06**
	(b)	Write a program to subtract BCD data stored in file register 040h from data stored in file register 041h. Store the result in BCD form in memory location 042h, and 043h	**06**
Q.5		Draw schematic diagram interfacing ADC0800 with PIC18XXX. Write an assembly program to generate triangle wave.	**12**
		OR	
Q.5		Draw schematic diagram interfacing four seven segment common anode display with PIC18XXX. Write a program to display count from 0000 to 9999 at 10ms time interval.	**12**

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