Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC-Semester –III (May-2012) Examination

Subject code:X31103

Subject Name: Microcontroller and Interfacing

Date: 16/5/2012

Time: 02.30 pm – 05.00 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)**	What is Microcontroller? Explain criteria for selection of Microcontroller. List difference between 8051 and 8052 Microcontroller.	**07**
	(b)	Draw and explain basic architecture of Intel 8051 Microcontroller.	**07**
Q.2	**(a)**	Write an 8051 C program to calculate the checksum bye for given data. 4 bytes of hexadecimal data: 25h, 62h, 3Fh, and 52h.	**07**
	(b)	Draw Pin diagram of Intel 8051 and explain function of each pin.	**07**
		OR	
	(b)	Explain pin configuration with circuit diagram for all ports.	**07**
Q.3	**(a)**	Write a Assembly program to multiply two 16-bit numbers for 8051 Microcontroller	**07**
	(b)	Write a program to transfer block of data from internal memory locations to external memory locations for 8051 Microcontroller.	**07**
		OR	
Q.3	**(a)**	Explain IE SFR and IP SFR.	**07**
	(b)	Explain following instructions [1] SWAP A [2] MOVX A,@DPTR [3] DIV AB [4] MOV A, #25h [5] MOV A, 25h [6] XCHD A,R1 [7] MOVC A,@A+DPTR	**07**
Q.4	**(a)**	Write a program to generate 1 KHz pulse waveform of 70% duty cycle on pin 1.0 using timer.	**07**
	(b)	Explain different modes of Timer for Intel 8051 Microcontroller.	**07**
		OR	
Q.4	**(a)**	Explain different modes for serial communication for 8051 Microcontroller.	**07**
	(b)	Draw and Explain 8051 connection to ADC 0804 with self-checking mode.	**07**
Q.5	**(a)**	Draw and explain interfacing of external 8K EPROM and 4K RAM with Intel 8051 the microcontroller.	**07**
	(b)	Explain RTC interfacing with 8051 microcontroller.	**07**
		OR	
Q.5	**(a)**	Write an 8051 C program to send letters ‘M’, ‘D’, and ‘E’ to the LCD using the busy flag method.	**07**
	(b)	Explain interfacing of microcontroller with DC motor and PWM.	**07**

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