Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – SUMMER • 2014

Subject Code: 173203 **Date: 03-06-2014**

Subject Name: Microprocessor and Microcontroller

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)**	Draw and Describe Architecture of intel-51, 8-bit Microcontroller.	**07**
	(b)	(1) What is PSW? Explain 8051 Flag register and its practical implementation. (2) Describe following pointers (i) PC (ii) SP (iii) DPTR (iv) R0 & R1	**07**
Q.2	**(a)**	Explain and Draw the demultiplexing of the AD0 to AD7 Bus in 8085 Microprocessor.	**07**
	(b)	Draw and Explain Reset and Clock Circuit of 8051 Microcontroller. What is the Purpose of capacitor in RESET circuit?	**07**
		OR	
	(b)	Draw and Explain the Programmable Model of 8051 Microcontroller with Different Flags.	**07**
Q.3	**(a)**	Explain the Addressing Modes of 8051 Microcontroller with example.	**07**
	(b)	Write an assembly program to generate 10Khz Square wave frequency with 60% duty cycle.(take T = 1.085 x 10-6 sec)	**07**
		OR	
Q.3	**(a)**	Define and describe the directives of 8051 Microcontroller.	**07**
	(b)	Write a program for the DS89C420/30 chip to toggle all the bits of P0, P1 and P2 every ¼ of a second. Assume a crystal frequency of 11.0592MHz.	**07**
Q.4	**(a)**	Write an 8051 c program to toggle all bits of P2 continuously every 500ms. Use timer 1, Mode 1 to create the delay.	**07**
	(b)	Generate a square wave with an ON time of 3ms and an OFF time of 10ms on all pins of port 0. Assume a crystal frequency of 22 MHz.	**07**
		OR	
Q.4	**(a)**	Explain the PCON registers and What is the important of the TI and RI flag bit in SCON Register?	**07**
	(b)	Write a C Program for the 8051 to receive bytes of data serially and put them in P1. Set the baud rate at 4800, 8-bit data, and 1 stop bit.	**07**
Q.5	**(a)**	Explain and Draw the interfacing of Liquid Crystal Display (LCD) with 8051 Microcontroller and also explain five different LCD Command.	**07**
	(b)	Write an 8051 C program to send letters “ONE” to the LCD using delays.	**07**
		OR	
Q.5	**(a)**	Explain level and edge-triggered interrupts of 8051 Microcontroller.	**07**
	(b)	Draw and Explain 8051 connection to ADC 0804 with one of the mode.	**07**

****