Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER 2013

Subject Code: 162402 Date: 27-05-2013

Subject Name: Microprocessor for Power Electronics

Time: 10.30 am - 01.00 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)**	Explain different addressing modes of 8051 microcontroller.	**07**
	(b)	Explain the significance of various bits of PSW.	**07**
Q.2	**(a)**	Explain with example following 8051 instructions. XCHD, CJNE, ADD, MUL, DIV.	**10**
	(b)	Draw basic block diagram of micro controller system.	**04**
		OR	
	(b)	Compare various features of microprocessor and microcontroller.	**04**
Q.3	**(a)**	Explain architecture of 8051 in detail.	**07**
	(b)	Write an assembly language program to toggle all the bits of port 1 by sending to it the values 55 H and AA H continuously. Put a time delay in between each issuing of data to port 1.	**07**
		OR	
Q.3	**(a)**	Explain serial data communication by 8051.	**07**
	(b)	Write an assembly language program to create a square wave of 50% duty cycle on bit 0 of port 1.	**07**
Q.4	**(a)**	Define bits of SCON, TCON AND PCON registers.	**07**
	(b)	Explain interfacing of 8051 with ADC 0804.	**07**
		OR	
Q.4	**(a)**	What is the difference between interrupt and polling ? Explain 8051 interrupts.	**07**
Q.4	**(b)**	Explain logical instructions of 8051.	**07**
Q.5	**(a)**	Give Pin description of 8051 chip.	**07**
	(b)	Write an 8051 C program to get a byte of data from P0. If it is less than 100, send it to P1; otherwise send it to P2.	**07**
		OR	
Q.5	**(a)**	Explain 4 X 3 matrix key board interfacing with 8051.	**07**
	(b)	The data pins of LCD are connected to P1.The information is latched into the LCD whenever its Enable pin goes from high to low. Write an 8051 C program to send ñAll the Bestò to this LCD.	**07**

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