Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIth SEMESTER–EXAMINATION – MAY- 2012

Subject code: 162402 **Date: 11/05/2012**

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)**	Draw and explain the internal block diagram of 8051.	**07**
	(b)	Explain different addressing modes of 8051 with example.	**07**
Q.2	**(a)**	Compare microcontroller with microprocessor giving atleast 7 proper points.	**07**
	(b)	Discuss PSW register in detail.	**07**
		OR	
	(b)	Discuss DPTR register in detail.	**07**
Q.3	**(a)**	Describe various types of memory and their organization.	**07**
	(b)	Write a program to 1. Load the accumulator with the value 55(H) and 2. Complement the ACC 700 times.	**07**
		OR	
Q.3	**(a)**	Describe various types of Jump and Loop instructions with examples.	**07**
	(b)	For a 89c51 with a crystal frequency of 22 MHz, generate a delay of 5 ms.	**07**
Q.4	**(a)**	Describe the 8051 register banks with address in RAM allocation of 8051 and also describe the PUSH and POP functions in stack with the help of proper example.	**07**
	(b)	Write a C program to add four 16 bit numbers.	**07**
		OR	
Q.4	**(a)**	State and explain any three assembler directives.	**07**
	(b)	Write a C program to multiply two 16 bit numbers.	**07**
Q.5	**(a)**	Explain different serial communication modes.	**07**
	(b)	What are the functions of Arithmetic Logic Unit? Draw a neat diagram of ALU showing all these functions.	**07**
		OR	
Q.5	**(a)**	What do you mean by interrupt in 8051? Discuss various types of interrupt and explain each of them.	**07**
	(b)	Explain keyboard interfacing with 8051 and draw flow chart to detect and identify key activation.	**07**

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