Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 162402 **Date: 26/10/2016**

Subject Name: Microcontrollers for Power Electronics

Time: 02:30 AM to 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 explain the internal block diagram of 8051 microcontroller.	**07**
	(b)	Make a comparative chart of microprocessor and microcontroller.	**07**
Q.2	**(a)**	Explain Program Status Word register along with its importance.	**07**
	(b)	Write the general features of 8051 microcontroller.	**07**
		OR	
	(b)	Write an ALP to generate a square wave on pin 2.4.	**07**
Q.3	**(a)**	What are assembler directives? Explain the following w.r.t. 8051: 1) DB 2) END 3) ORG	**07**
	(b)	What is a subroutine in 8051? Explain with suitable example.	**06**
		OR	
Q.3	**(a)**	Explain the register banks of 8051.	**06**
	(b)	Write a C program to add two 8 bit numbers.	**08**
Q.4	**(a)**	Explain serial communication in 8051	**07**
	(b)	List and explain any one interrupts in uC8051.	**07**
		OR	
Q.4	**(a)**	Write a program to generate a delay in microcontroller 8051.	**07**
Q.4	**(b)**	Write a program to blink a LED connected to P0.0.	**07**
Q.5	**(a)**	Draw flow chart to detect and identify key activation.	**07**
	(b)	Explain various data types in 8051.	**07**
		OR	
Q.5	**(a)**	Explain the interfacing of stepper motor with 8051.	**07**
	(b)	Explain a scheme to display 0-9 on a seven segment display connected to Port 1 of 8051.	**07**

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