Seat No.:	Enrolment No.
Seat NO	Emonitent No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - WINTER 2013

	•	Name: Microprocessor for Power Electronics	5	
Tim	ie: 02	2:30 pm to 05:00 pm Total Marks: 70	0	
Instructions: 1. Attempt all questions.				
	2.	Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Draw the internal block diagram of 8051 microcontroller. State the main features of 8051 microcontroller.	07	
	(b)	Explain different addressing modes of 8051 with example.	07	
Q.2	(a)	Compare microcontroller with microprocessor. List some applications using microcontrollers.	07	
	(b)	Discuss PSW register in detail.	07	
	<i>-</i> .	OR		
	(b)	Explain TMOD and TCON SFR.	07	
Q.3	(a)	Explain the following assembler directives of 8051: 1) DB 2) EQU 3) ORG 4) END	08	
	(b)	Write a program to toggle all bits of port 1 by sending values 55H and AAH top it continuously.	06	
Ω 2	(a)	OR Explain subrouting with a suitable example	06	
Q.3	(a) (b)	Explain subroutine with a suitable example. Write a program to 1) Load the accumulator with the value 55(H) and save	08	
	(0)	the value in register R4. 2) Add two numbers and subtract the sum of two numbers from a third number and store the final result in register R7.	00	
Q.4	(a)	Write a C program to add two 8 bit numbers.	07	
V. -T	(b)	Explain the generation of delay in microcontroller 8051 programming with a proper example.	07	
		OR		
Q.4 Q.4	(a) (b)	List and explain different interrupts in uC8051. Write a 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 07	
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Q.5	(a) (b)	Explain the interfacing of stepper motor with 8051. Write an ALP to transfer a letter 'E' serially at 9600 baud continuously and send letter 'Q' through port 0 which is connected to a display device.	07 07	
Q.5	(a)	OR Explain the steps to program 8051 to transfer and receive data serially.	07	
ν.	(b)	Explain keyboard interfacing with 8051 and draw flow chart to detect and identify key activation.	07	
