

Seat No.: _____

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GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (OLD) EXAMINATION – WINTER 2018****Subject Code:160903****Date: 16/11/2018****Subject Name: Microcontroller****Time: 02:30 PM 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.

Q1	(a)	With the help of neat sketch explain the functional block diagram of 8051	7
	(b)	Write a short note on I/O ports of 8051	7
Q2	(a)	What is addressing mode? Explain different addressing modes of 8051 with example.	7
	(b)	What is PSW? Explain the bit significant of all the bits of PSW register	7
		OR	
	(b)	Explain the following instruction . 1. ACALL 2. DJNZ 3. RET 4.SWAP	7
Q3	(a)	Give the function of following pins of 8051 (i) PSEN (ii) EA (iii) TXD (iv) ALE	7
	(b)	What is the size of RAM in Intel 8051 microcontroller? Give the RAM structure of 8051 Microcontroller.	7
		OR	
Q3	(a)	Give the format of TCON and TMOD SFR's. Explain how hardware control of timers can be achieved through GATE bit	7
	(b)	Write a C program to generate a square wave of 50Hz at pin P2.1.	7
Q4	(a)	Write an ALP to count the number of 1's of any number in register R5 and put the count in register R2	7
	(b)	Write a short note on interrupt structure & priorities of 8051.	7
		OR	
Q4	(a)	Write an ALP to find 2's compliment of a number & Write a short note on data types available in embedded C.	7
	(b)	Draw and explain in brief the interfacing circuit of unipolar stepper motor with 8051.	7
Q5	(a)	Explain the interfacing of multiple 7-segment display with 8051	7
	(b)	With neat block diagram, explain how SCR firing circuit can be designed using microcontroller.	7
		OR	
Q5	(a)	Draw & explain interfacing of matrix keyboard with 8051.	7
	(b)	With the help of a neat diagram explain the interfacing circuit of LCD with 8051	7
