Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI- EXAMINATION – SUMMER 2016

Subject Code:160903 **Date:09/05/2016**

Subject Name:Microcontroller

Time: 10:30 AM to 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)**	Describe the special features of microcontroller over microprocessor	**07**
	(b)	What are the different ports available in 8051? explain P0 and P1	**07**
Q.2	**(a)**	What is bit addressing capacity? Explain how it is used in internal RAM of 8051	**07**
	(b)	What is addressing mode? Explain different addressing modes of 8051 with example.	**07**
		OR	
	(b)	Explain the functions of following pins of 8051 (1) XTAL1 and XTAL 2 (2) RXD and TXD (3) PSEN (4) RESET (5) EA	**07**
Q.3	**(a)**	With the neat block diagram, explain interfacing of 8 kb of external ROM with 8051	**07**
	(b)	Write an Assembly level /C Program to add two 8 bit numbers and store the result in external memory location 3200 and 3201.	**07**
		OR	
Q.3	**(a)**	Give the format of TCON and TMOD SFR's. Explain how hardware control of timers can be achieved.	**07**
	(b)	What is PSW? Explain the bit significant of all the bits of PSW register	**07**
Q.4	**(a)**	What are interrupts? Explain the number of interrupts available in 8051 with priority.	**07**
	(b)	What is serial data transfer? Explain the method of serial data transfer in 8051	**07**
		OR	
Q.4	**(a)**	With the help of a neat diagram, explain the interfacing circuit of LCD with 8051	**07**
	(b)	Explain the interfacing of multiple 7-segment display with 8051	**07**
Q.5	**(a)**	What is editor, assembler, compiler, linker, simulator and debugger?	**07**
	(b)	Explain various types of branching instructions of 8051	**07**
		OR	
Q.5	**(a)**	Draw and explain in brief the interfacing circuit of unipolar stepper motor with 8051.	**07**
	(b)	Explain with example, Control statements and loops in embedded C	**07**

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