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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2150907 Date:06/05/2016

Subject Name:Microprocessor and Microcontroller Architechture & Interfacing

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.**

Q.1	**(a)**	Discuss the internal RAM structure of 8051. Explain SFR space in detail.	**07**
	(b)	What are the addressing modes for 8051? Explain in brief giving suitable example.	**07**
Q.2	**(a)**	Explain the function of following pins in 8085. SOD, HLDA, READY & TRAP.	**07**
	(b)	Explain the programming model of 8085. State the purpose of temporary register W & Z.	**07**
		OR	
	(b)	Draw & explain the physical port structure and also list the alternate functions of all the ports of 8051.	**07**
Q.3	**(a)**	Write a 'C' program to find average of 10 numbers stored in external memory & store the result in register R2.	**07**
	(b)	With the help of diagram show how de-multiplexing of address/data lines AD0-AD7 can be achieved? Also explain the generation of control signals $\overline{MEMW}$, $\overline{MEMR}$, IOR & IOW.	**07**
		OR	
Q.3	**(a)**	Write a 'C' program to generate a square wave of frequency 10 KHz on P1.2	**07**
	(b)	Explain all the bits of TMOD register & hence find the control word for selecting timer 0 in mode 2.	**07**
Q.4	**(a)**	Explain the special function registers SCON & SBUF in 8051 serial communication.	**07**
	(b)	Write an assembly program to add two 16 bit numbers.	**07**
		OR	
Q.4	**(a)**	What are the interrupts available in 8051? What is the default priority & how it can be changed?	**07**
	(b)	Why C programming is preferred to assembly programming? What are the data types available in C?	**07**
Q.5	**(a)**	With the help of diagram explain the interfacing of seven segment display with 8051.	**07**
	(b)	Differentiate between SJMP & LJMP, RET & RETI, MOVX & MOVC.	**07**
		OR	
Q.5	**(a)**	Write a short note on different types of memory.	**07**
	(b)	Compare Von-Neumann & Harvard architecture, CISC & RISC processors.	**07**

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