Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2150907 **Date: 31/05/2019**

Subject Name: Microprocessor and Microcontroller Architecture & 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.**

			MARKS
Q.1	(a)	Explain all the bits of PSW register.	03
	(b)	What is the function of following pins in 8085: TRAP & HLDA	04
	(c)	Draw & explain the timing diagram of MVI A, 32H instruction for 8085.	07
Q.2	(a)	Differentiate between MOVX & MOVC instructions	03
	(b)	How stacks are accessed in 8051? Explain PUSH & POP instructions.	04
	(c)	How demultiplexing of address/data lines (AD0 – AD7) can be achieved? Also explain the generation of all the control signals.	07
		OR	
	(c)	Write a short note on interrupts available in 8051.	07
Q.3	(a)	Explain assembly directives.	03
	(b)	Explain the instruction DJNZ & JBC in 8051	04
	(c)	Write an assembly program to find 0's & 1's from a given number.	07
		OR	
Q.3	(a)	List all the data types available in C.	03
	(b)	Explain the programming model of 8085.	04
	(c)	Write an assembly program to add two 16 bit numbers.	07
Q.4	(a)	What is the function of temporary registers W & Z in 8085.	03
	(b)	Compare Von Neumann & Harvard architecture.	04
	(c)	Write a C program to toggle all the bits of port 1 at a time delay of 50 ms.	07
		OR	
Q.4	(a)	Why C programming is preferred over assembly programming?	03
	(b)	Find control word to be loaded in timer registers TH0 & TL0 to generate time delay of 25 ms. Assume clock frequency as 11.0592MHz	04
	(c)	Write a C program to continuously transfer the message "YES" serially at 9600 baud, 8 bit data, and 1 stop bit.	07
Q.5	(a)	What is RETI instruction? How it is different from RET instruction?	03
	(b)	List the alternate functions of all the pins of port 3.	04
	(c)	Draw & explain the interfacing of matrix keyboard with 8051.	07
		OR	
Q.5	(a)	Explain the advantage of IDE in program development.	03
	(b)	Write a short note on types of memory.	04
	(c)	Explain the role of SBUF & SCON registers in serial transfer in8051.	07

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