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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