GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–VII EXAMINATION – WINTER 2025

Subject Code:3160914   **Date:02-12-2025**

Subject Name: Microprocessors and Microcontrollers

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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Draw the RAM allocation in 8051.	03
	(b)	Compare between microprocessor & microcontroller.	04
	(c)	Explain the function of following pins in 8085. 1. ALE 2.INTA 3.READY 4.HLDA	07
Q.2	**(a)**	Differentiate between MOVX and MOVC instructions.	03
	(b)	Explain demultiplexing of AD0-AD7 in 8085.	04
	(c)	State and explain various addressing modes of 8051.	07
		OR	
	(c)	Draw & explain block diagram of 8085.	07
Q.3	**(a)**	List conditional jump instructions. Explain any one.	03
	(b)	Explain the available data types in embedded C	04
	(c)	Explain all the bits of PSW register in 8051.	07
		OR	
Q.3	**(a)**	List all assembly directives.	03
	(b)	Differentiate between Van neuman and Harvard architecture	04
	(c)	With neat sketch explain timing diagram of instruction STA 2000H in 8085	07
Q.4	**(a)**	What is stack memory? How it can be accessed?	03
	(b)	Explain in brief the editor, assembler, compiler.	04
	(c)	Write a short note on interuppts in 8051.	07
		OR	
Q.4	**(a)**	What is the function of SBUF register in 8051?	03
	(b)	Explain all the bits of TCON register.	04
	(c)	Write a short note on serial communication.	07
Q.5	**(a)**	Give the vector addresses of various interrupts in ARM processor.	03
	(b)	Explain interfacing of 8051 with ADC 0808.	04
	(c)	Write an assembly program to add ten numbers stored from memory location 30H onwards and store the result at 50H.	07
		OR	
Q.5	**(a)**	List the advantages of C language over assembly.	03
	(b)	Explain SBUF register in 8051.	04
	(c)	Write a C program to generate square wave of 1 KHz frequency at P1.0 (use 12 MHz clock)	07

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