

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:2150907****Date:13-12-2023****Subject Name: Microprocessor and Microcontroller Architecture & Interfacing****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What is BUS? Explain the concept of Address Bus, Data Bus and Control bus.	03
	(b) Write the Difference between microprocessor and microcontroller.	04
	(c) Draw and explain the pin diagram of Microprocessor.	07
Q.2	(a) Explain the basic block diagram of Microcontroller.	03
	(b) Compare Von-Neumann and Harvard Architecture.	04
	(c) Write short note on Interrupts of 8051.	07
	OR	
	(c) Explain RAM Structure of 8051 in detail.	07
Q.3	(a) Explain register banks of 8051. How banks can be selected?	03
	(b) Explain PSW register in brief.	04
	(c) Describe Addressing Modes of 8051 Microcontroller with suitable examples.	07
	OR	
Q.3	(a) Explain Rotate Instructions of 8051.	03
	(b) Explain Assembler and Compiler in detail.	04
	(c) Draw and explain interfacing of seven segments LED with 8051.	07
Q.4	(a) What is multiplexing? Explain multiplexing for address and data bus for 8085 microprocessor with neat diagram.	03
	(b) Draw and explain Reset circuit of 8051.	04
	(c) Explain any one mode of Timer with suitable diagram.	07
	OR	
Q.4	(a) Explain TCON and TMOD Register.	03
	(b) Draw and explain Port-1 architecture.	04
	(c) Write detailed note on types of memory.	07
Q.5	(a) Explain IE register of 8051.	03
	(b) Draw pin diagram of 8051 Microcontroller.	04
	(c) Draw and explain LCD interfacing circuit.	07
	OR	
Q.5	(a) Explain any two bit level instruction with example.	03
	(b) Draw architecture of 8085 microprocessor.	04
	(c) Give a complete scheme to interface an 8-bit ADC to 8051 microcontroller.	07