

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2024

Subject Code:2141001

Date:18-07-2024

Subject Name:Microprocessor and 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) Explain the need of ALE in microprocessor 8085	03
	(b) With the help of circuit diagram, explain generation of various control signals in 8085 Microprocessor.	04
	(c) Explain in detail the functions of various pins of 8085.	07
Q.2	(a) Explain the difference between a compiler and an interpreter.	03
	(b) Explain various addressing modes of 8085 microprocessor	04
	(c) Explain the following instructions: (i) ANI 84H (ii) CALL (iii) ACI (iv) XCHG (v) PUSH (vi) HLT (vii) OUT	07
	OR	
	(c) Draw and explain the functional block diagram of the 8085 microprocessor.	07
Q.3	(a) Compare RISC and CISC processor	03
	(b) List down the steps to be executed before executing an interrupt in 8085 microprocessor	04
	(c) Draw the timing diagram for OUT 8bit instruction. List down various machines cycles of OUT instruction	07
	OR	
Q.3	(a) Compare Static RAM and Dynamic RAM memory	03
	(b) Compare I/O mapped I/O and memory mapped I/O with respect to 8085 microprocessor	04
	(c) Draw the timing diagram for STA 16bit instruction. List down various machines cycles of STA instruction	07
Q.4	(a) What are the differences between Linear Decoding and Absolute Decoding?	03
	(b) Write a program to count number of one in a given 8 bits number	04
	(c) Write an assembly program to turn a light on and off every 15 seconds. Use data bit D6 to operate the light	07
	OR	
Q.4	(a) Explain RET instruction	03
	(b) Explain how the contents of the stack memory and registers are exchanged when PUSH and POP instructions are executed, with example.	04
	(c) Set of 8 data bytes are stored at 8500H. End of the data is indicated by FFH. Write a program that check each data byte and transfers only those data byte that are less than (50)d and greater than (10)d to a new memory location starting from 8550H.	07

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| Q.5 | (a) | List down the advantages of segmentation in 8086 microprocessor | 03 |
| | (b) | Explain the 8085 vectored interrupts. | 04 |
| | (c) | Draw and explain block diagram of 80486 microprocessor | 07 |
| OR | | | |
| Q.5 | (a) | State features of 8259 programmable interrupt controller. | 03 |
| | (b) | Explain interfacing scheme for 8-bit ADC with 8085 microprocessor. | 04 |
| | (c) | Explain the programmable peripheral interface 8255A with block diagram. | 07 |
