Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3160712 Date:03/06/2022

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 flag register in 8085 microprocessor.	**03**
	(b)	Explain the following pins of 8085: (1) INTR (2) HOLD (3) SOD (4) READY	**04**
	(c)	Draw the block diagram of internal architecture of 8085 and explain its working.	**07**
Q.2	**(a)**	Explain the following instructions 1. LHLD 2. RAL 3. DAA	**03**
	(b)	Explain demultiplexing of data and address bus of 8085.	**04**
	(c)	Explain the timing diagram of the instruction MOV C,A (4FH) stored in location 2005H is being fetched. Define T-state, Machine cycle and Instruction cycle.	**07**
		OR	
	(c)	Explain interfacing of 4KB EPROM with 8085 using decoder and gates as required. Assume starting address as 0000H.	**07**
Q.3	**(a)**	Write a program to find 2's complement of a number stored at 2050H and store result at 2055H.	**03**
	(b)	Compare memory mapped I/O and I/O mapped I/O.	**04**
	(c)	What are interrupts? List and explain the interrupt available in microprocessor 8085?	**07**
		OR	
Q.3	**(a)**	Explain the concept of stack.	**03**
	(b)	Explain arithmetic instructions of 8085.	**04**
	(c)	Write an 8085 program to copy block of ten numbers starting from location 2050h to locations starting from 3050h.	**07**
Q.4	**(a)**	State the difference between PUSH and POP instruction.	**03**
	(b)	Explain the generation of control signals in 8085.	**04**
	(c)	Draw the internal block diagram of 8259A and explain the functions of each block in detail.	**07**
		OR	
Q.4	**(a)**	Explain Machine level language and Assembly level language with examples.	**03**
	(b)	Explain 8085 bus organization.	**04**
	(c)	Write a program to count continuously in hexadecimal from FFH to 00H in a system with a clock period of 0.5 μs. Use register C to set up 1 millisecond delay between each count and display the number at the output port1.	**07**

Q.5	**(a)**	How many memory locations can be addressed by microprocessor with 14 address lines? Also specify how many address lines are required for 2KB memory.	**03**
	(b)	Load the hexadecimal numbers 56H and A9H in registers D and E respectively and add them. If sum is greater than FFH, display 01H at output PORT0; otherwise display sum.	**04**
	(c)	Draw the internal block diagram of 8255 and explain the functions of each block in details.	**07**

OR

Q.5	**(a)**	Explain the given pins of 8086. 1. ALE 2. DEN 3.MN/MX	**03**
	(b)	Explain the modes of operation of 8086 microprocessor.	**04**
	(c)	Explain the block diagram of 8086 microprocessor.	**07**

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