Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2140304 **Date: 01/06/2017**

Subject Name: Microprocessor & its 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.**

			MARKS
Q.1		Short Questions	14
	1	What is Microprocessor?	
	2	What are Interrupts?	
	3	What is Demultiplexing?	
	4	What is PSW?	
	5	How many address lines are required for 8K Byte memory.	
	6	What is the function of ALE.	
	7	Give the significance of status signals S0 & S1.	
	8	What is the function of X1 & X2.	
	9	What is Stack.	
	10	Define Auxillary Carry Flag.	
	11	Explain the Masking of Bits?	
	12	Define SPHL.	
	13	Define STA.	
	14	Define DCX.	
Q.2	(a)	What is Bus? Why is Data bus bidirectional and Address Bus unidirectional?	03
	(b)	Compare Memory mapped I/O and Peripheral I/O.	04
	(c)	Explain 8085 addressing modes each with an example.	07
		OR	
	(c)	Draw and explain Architecture of 8085.	07
Q.3	(a)	Explain (i) T-state (ii) RST 5.5 (iii) JNZ	03
	(b)	Write an assembly program to find greatest between two numbers.	04
	(c)	How many machine cycles are required to execute LDA 3050h instruction? Draw complete timing diagram with each machine cycle and briefly explain it.	07
		OR	
Q.3	(a)	What are Tri-state devices and why are they essential in a Bus oriented system?	03
	(b)	Explain function of RIM & SIM Instructions.	04
	(c)	Draw and explain the timing diagram of instruction MVI A, 32H. Find execution time required, if clock frequency is 2MHz.	07
Q.4	(a)	Compare (i) Call and jump instruction (ii) serial and parallel data transfer.	03
	(b)	What are control signals? How do we generate them? Give their Importance.	04
	(c)	How many machine cycles are required to execute LDA 3050h instruction? Draw complete timing diagram with each machine cycle and briefly explain it.	07
		OR	
Q.4	(a)	What are the advantages of Assembly language in comparison with High level languages?	03
	(b)	Distinguish between the following pairs of instructions. (Any Two) ▪ LXIH 1234H and LHLD 1234H ▪ RAL and RLC ▪ JMP 1000H and CALL 1000H	04

	(c)	Interface an LCD with 8085 using 8255 peripheral chip & write instructions to Initialize LCD.	07
Q.5	(a)	Write a short note on Serial Communication Protocols.	03
	(b)	Draw 8254 block diagram & explain its control word format.	04
	(c)	Explain Interfacing of 7-segment display with 8085 & Programming.	07

OR

Q.5	(a)	Write a short note on Parallel Communication Protocols	03
	(b)	Draw & Explain the Block Diagram of 8155.	04
	(c)	Draw & Explain PIC 8259.	07

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