Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2140707 **Date:17/05/2019**

Subject Name: Computer Organization

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.**

			MARKS
Q.1	**(a)**	What is Tri-State buffer? Why it is useful to form a bus system?	**03**
	(b)	Explain LDA and STA instructions with its micro-operations with relevant D and T notations.	**04**
	(c)	Draw and explain second pass of assembler with its flow chart.	**07**
Q.2	**(a)**	In zero-address instructions format, how data from memory is accessed? Explain with example.	**03**
	(b)	Draw and explain 4-segment pipeline with space-time diagram.	**04**
	(c)	Draw flowchart for instruction cycle and explain it.	**07**
		OR	
	(c)	Write an assembly language program to multiply two positive numbers.	**07**
Q.3	**(a)**	What do you mean by instruction set completeness? Explain.	**03**
	(b)	Draw and explain 20 bits microinstruction code format.	**04**
	(c)	Explain RISC and CISC processor.	**07**
		OR	
Q.3	**(a)**	Explain arithmetic shift left operation. Describe how overflow is handled.	**03**
	(b)	Explain DMA with diagram.	**04**
	(c)	Explain three-address, two-address and one-address instructions with example.	**07**
Q.4	**(a)**	Explain instructions: BSA, ISZ, SZE	**03**
	(b)	Explain overlapped register windows.	**04**
	(c)	Explain Booth's algorithm with flowchart.	**07**
		OR	
Q.4	**(a)**	What is register stack? Explain Push operation.	**03**
	(b)	List addressing modes and explain any two of them.	**04**
	(c)	Explain BCD adder with diagram.	**07**
Q.5	**(a)**	Explain daisy chain arbitration.	**03**
	(b)	Differentiate between tightly coupled and loosely coupled systems.	**04**
	(c)	Explain paging and address translation with example.	**07**
		OR	
Q.5	**(a)**	What is cache coherence? Explain in brief.	**03**
	(b)	What is cache memory? Explain how it enhances speed of accessing data?	**04**
	(c)	What is asynchronous data transfer? Differentiate between strobe control method and handshaking method.	**07**

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