

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
