

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.

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

\*\*\*\*\*