

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019****Subject Code: 2140707****Date: 13/12/2019****Subject Name: Computer Organization****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	(a) Explain following terms: 1) Micro-Operation 2) Micro-instruction 3) Pseudo instruction.	03
	(b) Draw a diagram of 4-bit binary incrementer and explain it briefly.	04
	(c) List and explain any seven addressing mode.	07
Q.2	(a) Write a truth table of three state buffer and explain high impedance state in it with logic symbol diagram.	03
	(b) What is Flynn's taxonomy? Explain it in brief.	04
	(c) Explain shift micro-operations with necessary diagrams.	07
	OR	
	(c) Draw and explain a flowchart of interrupt cycle.	07
Q.3	(a) Write micro-instruction format and give one example.	03
	(b) Briefly explain any four characteristics of RISC.	04
	(c) What is role of first pass assembler? Explain assembler's second pass with flowchart.	07
	OR	
Q.3	(a) What is overlapped register window in RISC?	03
	(b) Draw and explain flow chart of address sequencing.	04
	(c) Explain Design of Control Unit with block diagram.	07
Q.4	(a) Explain the following instructions: CIL, SNA, INP.	03
	(b) Explain memory interleaving.	04
	(c) Name various CPU organizations and explain any one in detail.	07
	OR	
Q.4	(a) What are the various ways to handle branch difficulties? Explain any one in detail.	03
	(b) Explain crossbar switch interconnection structures.	04
	(c) Explain array multiplier with logic diagram.	07
Q.5	(a) Describe following: 1) Locality of reference 2) Cache memory 3) Hit ratio.	03
	(b) Write a short note on DMA.	04
	(c) Explain Booth Multiplication Algorithm with example.	07
	OR	
Q.5	(a) Differentiate isolated I/O and Memory mapped I/O.	03
	(b) List and describe dynamic arbitration algorithms.	04
	(c) What is cache memory mapping? Explain direct cache memory mapping in detail.	07
