Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – SUMMER • 2014

Subject Code: 130704 **Date: 23-05-2014**

Subject Name: Computer Organization and Architecture

Time: 02.30 pm - 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.**

Q.1	**(a)**	Design and Explain Common bus system using multiplexer.	**07**
	(b)	Draw and explain the flowchart for instruction cycle.	**07**
Q.2	**(a)**	Explain Design of Control Unit.	**07**
	(b)	Draw and explain first pass assembler.	**07**
		OR	
	(b)	Explain the working of Second Pass Assembler with its flowchart and its importance.	**07**
Q.3	**(a)**	Explain input-output instructions.	**07**
	(b)	Write short note on subroutines.	**07**
		OR	
Q.3	**(a)**	Explain Memory reference instructions.	**07**
	(b)	Explain various types of interrupts.	**07**
Q.4	**(a)**	Define Following Terms: 1) Computer Organization 2) Computer Architecture 3) Accumulator 4) Hardwired control 5) Register Transfer Language 6) Pseudo instructions 7) Micro operation	**07**
	(b)	Write an assembly language program to Add two double precision numbers.	**07**
		OR	
Q.4	**(a)**	Explain the following instructions: BUN, ISZ, CLA, CLE, CIR, SPA, SKI.	**07**
	(b)	Write an assembly language program to multiply two positive numbers.	**07**
Q.5	**(a)**	Explain booth algorithm for multiplication with a flowchart.	**07**
	(b)	Explain the Instruction Pipelining with example.	**07**
		OR	
Q.5	**(a)**	Multiply the (-9) with (-13) using Booth's algorithm. Give each step.	**07**
	(b)	Considering three segment instruction pipeline, illustrate the concepts of delayed load and delayed branch with example.	**07**

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