Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) EXAMINATION – WINTER 2017

Subject Code: 2140707 **Date:21/11/2017**

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.**

Q.1	**(a)**	What is a Digital Computer System? Explain the role of binary number system in it.	**03**
	(b)	Define RTL. Give an example of register transfer of data through accumulator.	**04**
	(c)	What is Register Stack? Explain it with example	**07**
Q.2	**(a)**	Explain the role if tri-state buffer with example.	**03**
	(b)	Write micro operations for ADD instruction.	**04**
	(c)	What is multiplexing? Explain the multiplexing of control signals in ALU.	**07**
		OR	
	(c)	List and explain types of shift operations on accumulator.	**07**
Q.3	**(a)**	What is Interrupt? How it is useful for a system?	**03**
	(b)	Differentiate MRI and non-MRI.	**04**
	(c)	Write an ALP for multiplying 3 integers stored in register stack.	**07**
		OR	
Q.3	**(a)**	What is machine language? How it differs from assembly language?	**03**
	(b)	List various addressing modes. Explain any TWO with example.	**04**
	(c)	Explain instruction fetching, decoding and executing in pipeline processing.	**07**
Q.4	**(a)**	What is PSW? Explain each bit of it.	**03**
	(b)	Draw flow graph of second pass of assembler.	**04**
	(c)	Differentiate synchronous and asynchronous data transfer with examples.	**07**
		OR	
Q.4	**(a)**	Signify the cache coherence in memory.	**03**
	(b)	What is micro-programmed control architecture?	**04**
	(c)	What is the use of IOP? Explain its communication with CPU.	**07**
Q.5	**(a)**	How virtual memory helps in increasing the storage capacity of a system?	**03**
	(b)	Give the use and role of CAM.	**04**
	(c)	Draw and explain shared memory architecture of multiprocessor system	**07**
		OR	
Q.5	**(a)**	Explain the role of associative memory.	**03**
	(b)	Differentiate tightly coupled and loosely coupled systems.	**04**
	(c)	Give the features of a multiprocessor system.	**07**

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