Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

MCA - SEMESTER- I EXAMINATION - WINTER - 2016

Subject Code: 2610004 Subject Name: Fundamentals of Computer Organization Time: 10.30 AM TO 01.00 PM Instructions: 1. Attempt all questions.  Date: 07/01 Total Man			Date:07/01/ 2017	
		ks: 70		
	2.	Make suitable assumptions wherever necessary.		
Q.1	(a) (b)	Draw and explain the basic components of digital computer. Explain printer and its types.	07 07	
Q.2	(a)	Do as directed. Show steps:  (i) Convert (1010110.1101) <sub>2</sub> to its equivalent hexadecimal number.  (ii) Convert (732) <sub>8</sub> to binary number.  (iii) Subtract (1010) <sub>2</sub> from (1101) <sub>2</sub> using 1 <sup>st</sup> complement.	02 02 03	
	<b>(b)</b>	What is universal gate? Which gates are known as universal gate? Explain with reason with help of any one such gate as universal gate.  OR	07	
	(b)	What is K-MAP? Derive Boolean expression (in SOP form) using K-MAP for a logic circuit that will have 1 output when X=0, Y=0,Z=1 and X=1 Y=1,Z=0 and 0 output for all other input states.	07	
Q.3	(a) (b)	What is RS Filp-Flop? Draw the circuit diagram and explain its working. Explain Binary Coded Decimal Adder.	07 07	
Q.3	(a) (b)	OR What is shift register? Explain its working with proper circuit diagram. Draw and explain basic memory cell.	07 07	
Q.4	(a) (b)	What is Cache memory and Virtual memory. Explain in detail.  Explain working of ADD & MOV instructions with example.  OR	07 07	
Q.4	(a) (b)	What is Bus? Explain different types of buses. Explain Instruction and Execution Cycle.	07 07	
Q.5	(a) (b)	Describe zero-address and two-address instruction word formats.  Explain instruction format of 8086 microprocessor.  OR	07 07	
Q.5	(a)	What do you mean by Addressing Techniques? Explain Indirect and Indexed Addressing techniques with an example.	07	
	<b>(b)</b>	Explain various parts of EU in 8086 microprocessor.	07	

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