GUJARAT TECHNOLOGICAL UNIVERSITY
MCA – SEMESTER I- EXAMINATION –WINTER-2025

Subject Code: 619406   **Date: 20/01/2026**
Subject Name: Basic Computer Concepts
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.**
    4. **Use of simple calculators and non-programmable scientific calculators are permitted.**

Q.1	**(a)**	Define following terms:	**07**
		1. Interrupt 2. DMA 3. BUS	
		4. BIOS 5. Firmware 6. OS	
		7. ROM	
	(b)	Explain Structure and Function of Computer with its all components.	**07**
Q.2	**(a)**	Compare Bus Interconnection and Point-To-Point Interconnect n Computer.	**07**
	(b)	State and prove commutative laws, associative laws and distributive law using logic gate and truth table.	**07**
		OR	
	(b)	What do you mean by Universal gate? Show that both NAND gate and NOR gate are universal gates.	**07**
Q.3	**(a)**	Differentiate:	**07**
		1. Computer Organization vs. Computer Architecture	
		2. RAM vs. Hard Disk	
		3. RAM vs. Cache Memory	
	(b)	Explain Instruction Cycle of a Computer system.	**07**
		OR	
Q.3	**(a)**	Comparison between RISC and CISC architecture.	**07**
	(b)	What is Direct Memory Access (DMA)? Explain the Block Diagram for DMA.	**07**
Q.4	**(a)**	What is Virtual Memory? Explain logical and physical memory in detail.	**07**
	(b)	Explain Five –State Process Model with diagram.	**07**
		OR	
Q.4	**(a)**	List and Explain functions of Operating System as a "Resource Manager".	**07**
	(b)	Explain functions of linker, loader, interpreter and compiler.	**07**
Q.5	**(a)**	Explain RAID levels in brief.	**07**
	(b)	Define the terms: seek time, rotational delay, access time, and transfer time.	**07**
		OR	
Q.5	**(a)**	Discuss Direct and Associative mapping of a Cache.	**07**
	(b)	Explain Cache memory principles with its elements.	**07**

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