GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code:2180808   **Date:09/05/2019**
Subject Name:Embedded Systems
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.**

Q.1	**(a)**	Define embedded system.	**03**
	(b)	Explain embedded hardware units and devices in a system.	**04**
	(c)	Explain basic architecture of MSP430.	**07**
Q.2	**(a)**	Compare RISC and CISC architecture.	**03**
	(b)	Explain wireless and mobile system protocol in brief.	**04**
	(c)	Explain serial communication devices with protocol.	**07**
		OR	
	(c)	Explain watchdog timer and real time clock in embedded systems.	**07**
Q.3	**(a)**	Explain I/O busy-wait approach in brief.	**03**
	(b)	Explain DMA (Direct Memory Access) in brief.	**04**
	(c)	Explain Interrupt Servicing (Handling) Mechanism in detail.	**07**
		OR	
Q.3	**(a)**	Explain Interrupt Sources and ISR Concept.	**03**
	(b)	Define (i) Process (ii) Thread (iii) Task	**04**
	(c)	Expalin Inter process ommunication in detail.	**07**
Q.4	**(a)**	Explain message queue functions in brief.	**03**
	(b)	Explain Semaphores and their functions in embedded system	**04**
	(c)	Explain Real Time Operating System (RTOS) in detail.	**07**
		OR	
Q.4	**(a)**	Explain file system management in RTOS	**03**
	(b)	Expalin Memory management in RTOS.	**04**
	(c)	Explain Task scheduling in RTOS.	**07**
Q.5	**(a)**	Explain RTOS security issues in brief.	**03**
	(b)	Explain Process Management in RTOS.	**04**
	(c)	Explain ADC module in MSP430.	**07**
		OR	
Q.5	**(a)**	Enlist on-chip peripherals in MSP430.	**03**
	(b)	Explain basic feactures of CCS (Code Composer Studio).	**04**
	(c)	Explain I/O ports in MSP430.	**07**