Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2722906 **Date:30/05/ 2015**

Subject Name: Embedded Systems

Time: 2:30 PM – 5:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Notations used have usual meaning.**

Q.1	**(a)**	Write a detailed note on Core of embedded system.	**07**
	(b)	Draw and explain functional block diagram of 8051 microcontroller.	**07**
Q.2	**(a)**	Explain DRAM with reference to embedded system technology. Also discuss the need of DRAM controller.	**07**
	(b)	What are the advantages of using standard single purpose processor over general purpose processor? Explain standard single purpose processor peripherals.	**07**
		OR	
	(b)	What is Semaphore? Discuss about the deadlock and its conditions with suitable example.	**07**
Q.3	**(a)**	Explain interfacing of LED display & keyboard with 8051 microcontroller.	**07**
	(b)	Discuss inter task communication in real time system.	**07**
		OR	
Q.3	**(a)**	Discuss importance of Interrupt. Explain the interrupts of 8051 Microcontroller.	**07**
	(b)	Explain application of microcontroller for Temperature control.	**07**
Q.4	**(a)**	Write a detailed note on embedded system design aspects.	**07**
	(b)	Explain in detail PWM interfacing.	**07**
		OR	
Q.4	**(a)**	Explain in detail architecture of PIC (16F72) Processor.	**07**
	(b)	What is the concept of RISC? Discuss about it. Also explain the concept of pipelining with neat sketch.	**07**
Q.5	**(a)**	Explain Stepper Motor Interfacing with 8051 Microcontroller.	**07**
	(b)	Discuss foreground and background scheduling in a reference to real time systems.	**07**
		OR	
Q.5	**(a)**	Explain Universal synchronous/asynchronous receiver/transmitter (USART) with suitable example.	**07**
	(b)	Write a brief note on I^2C bus.	**07**

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