Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER - I • EXAMINATION - SUMMER • 2013

Su	bjec	t code: 715203 Date: 06-06-2013	
	•	t Name: Embedded Systems Software Design 10.30 am – 01.00 pm Total Marks: 70	
In	stru	ctions:	
	2	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a)	List out Embedded System constraints and Embedded System application in different area. Explain in brief.	07
	(b)	Explain Harvard and Von Neumann Architecture in detail.	07
Q.2	(a) (b)	Write down the require specifications of DAC and explain in brief. Explain Successive Approximation Register ADC.	07 07
		OR	
	(b)	Explain operation of R-2R ladder DAC.	07
Q.3	(a) (b)	Explain prototyping and its challenges. Differentiate between C language and Embedded C.	07 07
		OR	
Q.3	(a)	Justify the difference between RISC and CISC in context to architecture, execution time, program length and interrupt latency.	07
	(b)	Explain Serial Peripheral Interface protocol.	07
Q.4	(a) (b)	Describe the addressing mode of 8051 with instruction. List the 8051 interrupts and explain interrupt process execution.	07 07
		OR	
Q.4	(a) (b)	Explain the internal RAM structure of 8051. Mention the steps to interface LCD with microcontroller.	07 07
Q.5	(a) (b)	Which are the processor modes in ARM? Explain in detail. Explain branch instructions of ARM processor in brief.	07 07
		OR	
Q.5	(a) (b)	Explain Load and Store ARM instructions in detail. Explain ARM 5-stage pipeline execution process.	07 07
