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Seat No.:	
No.	

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION - SUMMER • 2015

\mathbf{S}	ubje	ct Code: 171005 Date: 06/05/2015	Date: 06/05/2015	
Subject Name: Embedded System Time: 02.30pm-05.00pm Instructions:		02.30pm-05.00pm Total Marks: 70 tions:	Total Marks: 70	
		 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 		
Q.1	(a)	Define and classify Embedded systems with examples and list applications of the same.	07	
	(b)	What is pipeline architecture? Explain its advantages and limitations. Discuss in detail ARM 3 stage pipeline architecture.	07	
Q.2	(a)	Draw the block diagram of ARM architecture and explain its working. State the importance of barrel shifter?	06	
	(b)	Explain following ARM instructions with suitable examples. (1)ADDEQ (2)BNE (3)LDMIA (4)MRS OR	08	
	(b)	Explain following ARM instructions with suitable examples. (1)TEQ (2)SWI (3)BLX (4)MLA	08	
Q.3	(a) (b)	Explain real time clock and watch dog timer in detail, compare the two. List different branch instructions available in ARM processor and explain branch instruction execution with proper example. OR	07 07	
Q.3	(a)	Discuss Thumb's programmer model for ARM and compare the same with ARM	07	
	(b)	write a short note on OS security issues.	07	
		List various serial communication protocols used in embedded system design and	07	
	(b)	explain any two of them. Write a short note on semaphore.	07	
		OR		
Q.4	(a)	List various wireless and mobile system protocols and explain Bluetooth and Zigbee in detail.	07	
	(b)	List the features accepted and rejected by ARM architecture with respect to RISC Architecture and justify them.	07	
Q.5	(a)	What is a Task? Discuss different task states with state diagram and explain Task control box.	07	
	(b)	With respect to RTOS explain memory management in detail.	07	
a -		OR	c =	
Q.5	(a) (b)	Explain Timer and Event function in detail for RTOS. Explain Socket function and RPC function with respect to RTOS.	07 07	
