Seat No.:	Enrolment No.
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Subject code: 170907

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER - VII • EXAMINATION - WINTER 2012

Date: 28/12/2012

Subject Name: Advanced Microcontroller and Embedded System Time: 10.30 am - 01.00 pm Total Marks: 70			
Instr	1. A	ONS: Attempt any five questions. Make suitable assumptions wherever necessary.	
Q.1	(a) (b)	Explain the architecture of CIP-51 microcontroller with block diagram. Discuss the PLL of CIP-51 microcontroller and also explain the procedure for initializing.	07 07
Q.2	(a) (b)	Discuss the capture mode of PCA time in 89C51rd2 microcontroller. Discuss the pulse width modulator mode of 89C51rd2 microcontroller with C-programming code.	07 07
	(b)	OR What are advantages of watchdog timer of 89C51rd2 microcontroller? Explain the watchdog timer in details.	07
Q.3	(a) (b)	Explain the SPI communication protocol of 89C51rd2 microcontroller. Explain the interfacing of 89C51 controller to RTC. OR	07 07
Q.3	(a) (b)	Explain the different mode of URAT of 89C51rd2 microcontroller. Discuss the I2C communication protocol of 89C51rd2 microcontroller.	07 07
Q.4	(a) (b)	Explain the round robin with interrupt architecture with appropriate C-programming structure. Compare the characteristics of following software architecture (1) Round Robin (2) Function Queue Scheduling (3) Real Time Operating System	07 07
Q.4	(a) (b)	OR Explain the task and task states in RTOS. Also discuss the role of scheduler. What is the shared data problem in RTOS? Explain with C-programming structure.	07 07
Q.5	(a)	Define the embedded system. List the application of small, medium and large embedded system.	07
. .	(b)	What is the Reentrancy in RTOS? Discuss the reentrancy rules. OR	07
Q.5	(a) (b)	Explain the task code and routine code in embedded programming. What is worst time and worse case in embedded system? Also explain the difference between Real Time OS and Conventional OS	07 07
