GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016

Su Su Tii Inst	bject bject me:10 tructic 1. 2.	Code:2172001 Date:18/11/201 Name:Microcontrollers and Embedded Systems 0.30 AM to 1.00 PM Total Marks: 7 Ons: Attempt all questions. Make suitable assumptions wherever necessary.	.6 70
	3.	Figures to the right indicate full marks.	
Q.1	(a) (b)	Interface DAC0808 with 8051 microcontroller. Explain the PIC18F stack & stack operation.	07 07
Q.2	(a) (b)	List & explain the special features of PIC18F452. Differentiate between: (i) Von-Neuman vs Harvard architecture (ii) RISC vs CISC architecture	07 07
		OR	
	(b)	Explain the various challenges faced in embedded system design.	07
Q.3	(a)	Write a C program to rotate DC motor in clockwise direction at 66% PWM for 8051.	07
	(b)	Explain the instructions related to table read/write operation in PIC18F452. OR	07
Q.3	(a)	Write a conversion routine in C for ADC0804 interfaced to 8051 microcontroller.	07
	(b)	Describe the bit pattern of IPR1 & PIE1 registers of PIC18F452.	07
Q.4	(a) (b)	Explain RS-232 connections to Atmel 8051. Write a C program to increment P1 port every 0.5 second. Use Timer 1 to generate delay. XTAL=24MHz.	07 07
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Q.4	(a) (b)	Write a C program using interrupts to count pulses on T0 pin & display it on P2 port while continuously transmitting letter Y at 56kbps. XTAL=11.0592MHz.	07 07
Q.5	(a)	A set of 50 marks are stored starting at address 20H in Access bank of PIC18F452 microcontroller. Write an ALP to find the highest mark entry.	07
	(b)	Interface 7segment LEDs with PIC18f452.	07
Q.5	(a)	OR Write an ALP to copy a block of 10 bytes of data starting at address 40H to 60H of PIC18E452 microcontroller	07
	(b)	Draw an interfacing circuit of 8x8 matrix keyboard with 8051. Also draw flowchart of the process.	07
