## GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER- VI • EXAMINATION - SUMMER-2017

•		ode: X60902 Date: 02/05/20.	17
•		ame: Microcontroller and Interfacing	
Time	<b>: 10.3</b>	30AM to 01:00PM Total Marks:	<b>70</b>
Instr	uctio	ons:	
		ttempt all questions.	
	2. N	Take suitable assumptions wherever necessary.	
		igures to the right indicate full marks.	
Q.1	(a)	List main features of 8051 microcontroller. Draw memory structure for 8051 microcontroller.	07
	<b>(b)</b>	Explain difference between microprocessor and microcontroller.	07
Q.2	(a)	Write an assembly language program to multiply two 16 bit numbers stored in external memory.	07
	<b>(b)</b>	List and explain different addressing modes of 8051 microcontroller. Explain each with one suitable example.	07
		OR	
	<b>(b)</b>	Write and explain bit format for SCON and PCON SFR of 8051 microcontroller.	07
Q.3	(a)	Write a program to perform the following.  1. Keep monitoring P1.2 until it becomes high.	07
	<b>(b)</b>	2. When P1.2 becomes high write value 45H on P0. 3. Sent a high to low pulse to P2.3. List and explain importance of different flags of 8051 microcontroller. Also explain PSW register of 8051 microcontroller.	07
		OR	۰.
Q.3	(a)	Explain any two timer modes of 8051 microcontroller with necessary diagram.	07
	<b>(b)</b>	List and explain different directive used for 8051 microcontroller.	07
Q.4	(a)	Explain difference between interrupt and pulling. Explain IE register for 8051 microcontroller.	07
	<b>(b)</b>	Write an 8051 C program to convert ASCII digit of '4' and '7' to packed BCD and display them on port P1.	07
0.4	(.)	OR	07
Q.4	(a)	Write an 8051 C program to transfer the message "Good morning" serially at 9600 baud, 8 bit data, 1 stop bit. Do this continually.	07
Q.4	<b>(b)</b>	Draw and explain interfacing of 2 K bytes external RAM and 16K bytes of ROM with 8051 microcontroller.	07
Q.5	(a) (b)	Write an 8051 C program to display "Happy New Year" on LCD. Explain interfacing diagram of stepper motor with 8051 Microcontroller. Write a program to rotate stepper motor in clockwise direction continuously in half step mode.	07 07
Q.5	(a)	OR Draw and explain interfacing of DC motor using PWM method with 8051	07
Ų.3	(a)	microcontroller.	U/
	<b>(b)</b>	Explain interfacing of ADC with 8051 Microcontroller with necessary diagram.	07

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