GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC- SEMESTER-III - EXAMINATION - SUMMER 2017

Subject Code: X31103 Date:3		1/05/2017 Marks: 70	
Subject Name: Microcontroller And Interfacing Time: 02:30 PM to 05:00 PM Instructions: Total Ma			
Inst		ns: Attempt all questions.	
		Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
Q.1	(a)	List and explain selection criteria of Microcontroller to use it for a particular application	07
	(b)	Draw and explain programming model of 8051 Microcontroller.	07
Q.2	(a)	Explain function of following Instruction [1] DA A [2] MOVX A,@DPTR [3] DEC @ Ri [4] RLC A [5] MOVC A,@A+DPTR [6] DJNZ R7, label [7] XCHD A, @R1	07
	(b)	Write an ALP to sort block of ten data stored in external memory location from 3000H in descending order.	07
	(b)	OR Write a C program to bring in a byte of data serially one bit at a time via P1.0 the MSB should come in first.	07
Q.3	(a)	Explain different addressing modes of 8051 Microcontroller.	07
	(b)	Draw internal circuit diagram of all ports of 8051 Microcontroller and explain.	07
		OR	
Q.3	(a)	Write an 8051 C program to calculate checksum byte for the data 25H, 62H, 3FH, 52H.	07
	(b)	Draw and explain control word for TCON and TMOD SFR of 8051 Microcontroller.	07
Q.4	(a)	Write C program to generate 5 KHz pulse waveform of 50% duty cycle on pin 1.0 using timer-1 in mode-2 for 8051 Microcontroller.	07
	(b)	Write a program to transfer the message "Gujarat" serially through 8051 Microcontroller. Do this continuously. OR	07
Q.4 Q.4	(a) (b)	Draw and explain control word for IP and IE SFR of 8051 Microcontroller. List serial data transmission mode of 8051 Microcontroller. Explain mode 1 with necessary diagram.	07 07
Q.5	(a)	Draw and explain Interfacing of 8 K bytes External RAM and 32K bytes of ROM with 8051 microcontroller.	07
	(b)	Explain LCD interfacing with 8051 Microcontroller. OR	07
Q.5	(a)	Explain RTC interfacing with 8051 Microcontroller. Write program to get values of hour, minute and second from RTC to RAM location 51H, 52H and 53H respectively.	07
	(b)	Explain interfacing of DAC with 8051 Microcontroller. Write program to generate triangular wave at the output of DAC.	07
