Seat No.:		Enrolment No	_
		GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER-III • EXAMINATION – SUMMER • 2014	
Subject Code: X31103 Date: 24-0			
Subj	ect N	ame: Microcontroller and Interfacing	
Time: 02:30 pm – 05:00 pm Total Marks: 7			
Instru			
		Attempt all questions.	
		Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
	J. ]	rightes to the right indicate full marks.	
Q.1	(a)	List main features of Intel 8051 Microcontroller.	07
		Also draw and explain RAM structure for it.	
	<b>(b)</b>	Explain different addressing modes of Intel 8051 Microcontroller with	<b>07</b>
		suitable example.	
<b>Q.2</b>	(a)	Draw and explain interfacing of external 4K EPROM and 16K RAM with	<b>07</b>
		the Intel 8051 Microcontroller.	
	(b)	List all special function register with full name of Intel 8051 Microcontroller.	07

OR

Write an assembly language program to count number of 0's and 1's of data stored

(a) Write and explain bit format for TMOD and TCON special function register 07

Write main programming steps to generate time delay using mode 1. Write a

C language program to generate square of 1 KHz of 50% duty cycle using

List the interrupts available in the Intel 8051 Microcontroller. Explain

interrupt enable special function register and interrupt priority special

Write main steps to receive character bytes serially. Write a program for

Intel 8051 to receive bytes of data serially and put them in P1, set the baud

(b) Have P1 port read and transmitted serially, and a copy given to P2, (c) Make timer 0 generate a square wave of 5 KHz frequency on P0.1.

(a) List main command used for programming of LCD. Write a program to

Draw and explain interfacing diagram of DAC with Intel 8051

Microcontroller. Write program to generate sine wave at the output of DAC.

display "Happy New Year" on LCD using Intel 8051 Microcontroller.

(a) Write an assembly language program to transfer the message "Your Name"

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(b) Draw and explain pin configuration with circuit diagram for all port of Intel

(a) Write C language program to convert packed BCD number to ASCII value for

in 20 H memory location for Intel 8051 controller.

Explain working of any four.

for Intel 8051 Microcontroller.

rate at 4800, 8 bit data, and 1 stop bit.

serially at 9800 baud rate, 8-bit data, and 1 stop bit.

(a) Receive data serially and sent it to P0,

Write a program using interrupts to do the following.

Assume that XTAL-11.0592. Set the baud rate at 4800.

8051 microcontroller.

Intel 8051 controller.

timer 0 in mode 1.

function register.

Q.3

0.3

0.4

0.4

**Q.4** 

Q.5

**(b)** 

**(b)** 

- Q.5 (a) Draw and explain RTC interfacing with Intel 8051 Microcontroller. Write an assembly language program to get values of hour, minute and second from RTC to RAM location 21H,22H and 23H respectively.
  - (b) Draw and explain interfacing diagram of DC motor using PWM with Intel **07** 8051 Microcontroller.

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