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

Subject Code:2173203   **Date:18/11/2016**
Subject Name:Microprocessor and Microcontroller
Time:10.30 AM to 1.00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the Pin Diagram of the 8085 microprocessor.	**07**
	(b)	Explain De-multiplexing of the AD0-AD7 for the microprocessor 8085.	**07**
Q.2	**(a)**	Explain architecture of the 8051 microcontroller.	**07**
	(b)	Explain the addressing mode for the AVR Controller.	**07**
		OR	
	(b)	Explain Generation of the Control signal of the 8085 microprocessor.	**07**
Q.3	**(a)**	Design a microprocessor memory interfacing system for 4Kbyte RAM with starting address 0000H.Immediately connect 2Kbyte EEPROM.use 3-8 decoder and if gate is required.	**07**
	(b)	Design 16X8 register using 4X4 register chips for the microprocessor 8085.	**07**
		OR	
Q.3	**(a)**	Write a program to toggle all the bits of the I/O register PORT B every 1 Second. Assume that the crystal frequency is 8MHz and system is using an ATmega32.	**07**
	(b)	Assuming that program ROM space starting at $500 contains "WORLD PEACE". Write a program to send all the characters to Port one bye at a time.	**07**
Q.4	**(a)**	Explain CALL and JUMP Instruction with example for the AVR Controller.	**07**
	(b)	Explain Logical & Rotate Instruction with example for the AVR Controller.	**07**
		OR	
Q.4	**(a)**	Write a C program to toggle only the PORTB.4 bit continuously every 70µs.Use Timer 0, Normal mode and 1:8 prescaler to create the delay. Assume XTAL=8MHz.	**07**
	(b)	Write a C program to display "GTU EXAM "on LCD for AVR controller.	**07**
Q.5	**(a)**	A switch is connected to pin PA7.Write a C program to monitor for the status of SW and perform the following: (a) If SW=0, the stepper motor moves clockwise. (b) If SW=1,the stepper motor moves counterclockwise.	**07**
	(b)	Write a C program for the AVR to transfer the letter 'G' serially at 9600 baud, continuously. Use 8-bit data and 1 stop bit. Assume XTAL=8MHz.	**07**
		OR	
Q.5	**(a)**	Explain I2C Bus protocol.	**07**
	(b)	Write an AVR C program to convert packed BCD 0X29 to ASCII and display the bytes on PORTB and PORTC.	**07**

****