DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

Winter Semester Examination – December - 2019

Branch: Electronics and Telecommunication Engineering **Sem.:- V**
Subject:- Microcontroller and its Applications (BTEXC505) **Marks: 60**
Date:-18/12/2019 **Time:- 3 Hr.**

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

(Marks)

Q.1. **a)** Explain any three different addressing modes used in 8051 microcontroller with suitable examples of each. **(06)**

b) Draw pin diagram of 8051 microcontroller and state functions of all pins of Port 3. **(06)**

Q.2. **a)** Draw interfacing diagram to interface an LCD to 8051 microcontroller and write a program to display message "*There are only 10 types of people in the world: those who understand binary, and those who don't.*" on LCD. **(06)**

b) Draw interfacing diagram to interface a seven segment display to port 1 of 8051 microcontroller. Write a program to display all even numbers between 0-9 repeatedly. **(06)**

Q.3. **a)** Explain function of each bit of TMOD of 8051 microcontroller. **(06)**

b) Write a program in which the 8051 gets data from P1 and sends it to P2 continuously while incoming data from the serial port is sent to P0. Assume that XTAL = 11.0592MHz. Set baudrate at 9600. **(06)**

Q.4. **a)** Explain MOVWF, ADDWF, COMF instructions with suitable examples of each. **(06)**

b) Explain function of each bit of T0CON register of PIC microcontroller. **(06)**

Q.5. **a)** Assume that PORTC is connected to 8 switches and PORTD to 8 LEDs. Write a program to generate a square wave on pin PORTB.5 using Timer 0, while at the same time transfer data from PORTC to PORTD. **(06)**

b) Draw interfacing diagram to interface unipolar stepper motor to PIC18 microcontroller. Write a program to rotate motor in clockwise direction continuously. **(06)**

Q.6. **a)** Define Baudrate. Write function of any five pin of RS232 DB-9 connector. **(06)**

b) Assume that Fosc = 10 MHz. Find values to be loaded into SPBRG register to have the following baudrates. **(06)**

19200
9600
4800

**********PAPER END**********

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