

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Electronics & Communication Engineering) (Sem.-4)

**MICROPROCESSORS AND MICROCONTROLLERS**

Subject Code : BTEC-402-18

M.Code : 77566

Date of Examination : 18-11-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) For a time delay of 20ms, what value do you need to load into the timer registers? (Assume XTAL = 11.0592 MHz).
- b) Describe SCON register of 8051 microcontroller.
- c) Compare memory mapped I/O and peripheral mapped I/O in 8085 microprocessor.
- d) Show the connections of LCD interfacing with 8051.
- e) What are vectored and non-vectored interrupts?
- f) Write an assembly program to subtract the contents of R<sub>1</sub> of Bank 0 from the contents of R<sub>0</sub> of Bank 1.
- g) What is the difference between the instructions "LCALL" and "ACALL"?
- h) Draw and discuss the TMOD register.
- i) Write an assembly program to divide two 8 bit numbers and save the result in 50H and 51H memory location for 8051 microcontroller.
- j) Give the different flags available in 8085 microprocessor.

## SECTION-B

2. With a neat circuit diagram, explain how a keyboard is interfaced with 8051 microcontroller and write 8051 ALP for keypad scanning?
3. Distinguish between interrupt and polling. Discuss various types of interrupts in 8051.
4. WAP to add 10 bytes of data stored at RAM memory 40H to 49H and save the lower byte of result at 61H and higher byte at 62H memory locations.
5. List and explain the addressing modes of 8051 with taking two examples for each addressing modes.
6. List out the various categories of the 8085 instructions. Give examples of the instructions for each group.

## SECTION-C

7. Write a program that continuously gets a single bit of data from P2.4 and sends it to P2.2, while simultaneously (a) creating square wave of 10 ms period on P1.2, and (b) sending message "GET SLOW" stored at ROM locations starting at 0200H. Use timer 0 to create the square wave. Assume XTAL = 11.0592 MHz and 4800 baud rate.
8. a) What is addressing mode? Explain the different addressing modes with suitable examples for 8085 microprocessor.  
b) Discuss the working of stack and subroutine in 8085 programming.
9. What is UART? What is the function of SBUF register? Discuss the 8051 serial communication modes.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**