



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING**

**MAKE UP EXAMINATION – JAN 2023**

**Course Code:** EEE2005

**Course Name:** Microprocessor and Microcontrollers

**Program** : B. Tech

**Date:** 24-JAN-2023

**Time:** 9:30 AM-11:30 AM

**Max Marks:** 60

**Weightage:** 30%

**Instructions:**

- (i) Read the all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and Non-programmable calculators are permitted

**Part A [Memory Recall Questions]**

**Answer all the Questions. Each Question carries TWO marks.**

**(5Qx 2M=10M)**

1. In 8051 micro controller, the instruction ADD A, #100 performs
  - (a) 100(decimal) is added to contents of address register
  - (b) 100(decimal) is subtracted from the accumulator
  - (c) 100(decimal) is added to contents of an accumulator
  - (d) none

(C.O.No.1) [Knowledge]
2. In 8051 micro controller, the address register for storing the 16-bit addresses can only be
  - (a) Stack Pointer (b) Data Pointer (c) Instruction Register (d) Accumulator

(C.O.No.1) [Knowledge]
3. In 8051 microcontroller, the port which is used for the both addressing and data transfer is
  - (a) Port 0 (b) Port 1 (c) Port 2 (d) Port 3

(C.O.No.2) [Knowledge]
4. While LCD is interfacing with 8051 microcontroller, the RS pin is \_\_\_\_\_ for an LCD.
  - a) input (b) output (c) input & output (d) none of the mentioned

(C.O.No.3) [Knowledge]
5. The number of LEDs Connected can be connected to port of 8051 is, if all are expected to glow simultaneously is
  - a) 9 (b) 8 (c) 10 (d) 11

(C.O.No.4) [Knowledge]

## Part B [Thought Provoking Questions]

Answer all the Questions. Each Question carries TEN marks.

(3Qx10M=30M)

6. Narasimha need to generate a square wave connected to port.0 of 8051 micro controller for particular application. Write an assembly language program to generate a square waveform with 5ms use timer 0 mode 1. (C.O.No.2) [Comprehension]
7. Mr. Naren wanted to test a complex which is written in Assembly Language Program (ALP) for a App development with the following cases.  
(a) load the accumulator with the value 66H, and (b) complement the Accumulator 500 times.  
write the program which is satisfying the above two cases. (C.O.No.1) [ Comprehension]
8. Mr. Ganesh was learning the addressing modes in 8051 Controller, he needs to copy the value 66H into RAM memory locations 50H to 51H using (a) direct addressing mode, (b) register indirect addressing mode without a loop, and (c) with a loop. Write the ALP for the above cases. (C.O.No.4) [ Comprehension]

## Part C [Problem Solving Questions]

Answer the Question. Question carries TEN marks.

(2Qx 10M=20M)

9. Dr.Jayadhar measure the temperature of a patient and test it for the value 75H (in degrees). According to the test results, he stores the temperature value into the registers indicated by the following cases.  
If T = 75 then A = 75  
If T < 75 then R1 = T  
If T > 75then R2 = T. Write ALP for the same. (C.O.No.3) [Comprehension]
10. 16x2 LCD module is a very common type of LCD module that is used in 8051 based embedded projects. It consists of 16 rows and 2 columns of 5x7 or 5x8 LCD dot matrices. Write an assembly Language Program to display string "GANESH" on 16/2 LCD display using 8051 microcontrollers. (C.O.No.4) [Comprehension]