



DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING

CENTRALIZED QUESTION BANK

**1030234340 - MICROCONTROLLER AND
EMBEDDED SYSTEMS**

**DIRECTORATE OF TECHNICAL
EDUCATION GOVERNMENT OF
TAMILNADU**

DIPLOMA END SEMESTER / YEAR EXAMINATION – 2025

Course: Electrical and Electronics Engineering

Subject : Microcontroller and Embedded Systems

QP Code : 1030234340

Time : 3 Hours

Date :

Session:

Max Marks: 100

Answer the following Questions

- 1 Write an Assembly Language Program for 16-bit addition and execute the same in the 8051 microcontroller kit.
- 2 Write an Assembly Language Program for 16-bit subtraction and execute the same in the 8051 microcontroller kit.
- 3 Write an Assembly Language Program for 8 bit multiplication and execute the same in the 8051 microcontroller Kit.
- 4 Write an Assembly Language Program for 8 bit division and execute the same in the 8051 microcontroller Kit.
- 5 Write and execute an Assembly Language Program for blinking LED with a time delay using time delay subroutine.
- 6 Write and execute an Assembly Language Program for transferring the status of input switches to the output LEDs after the counter counting 5 number of pulses by using Counter 0 in Mode 1.
- 7 Interface a 4x4 matrix keypad with the 8051 microcontroller. Write an Assembly Language Program to detect key presses and display the pressed key on an LCD.
- 8 Interface a seven-segment LED display with the 8051 microcontroller. Write an Assembly Language Program to display digits from 0 to 9.
- 9 Interface a stepper motor with the 8051 microcontroller. Write an Assembly Language Program to rotate the motor in both clockwise and counterclockwise directions with a specified delay.
- 10 Interface a DC motor with the 8051 microcontroller. Write an Assembly Language Program to control a DC motor's speed.
- 11 Interface an ADC with the 8051 microcontroller. Write an Assembly Language Program to convert an analog voltage input and display the digital equivalent on an LCD.
- 12 Write an Assembly Language Program to generate a PWM signal using the 8051 microcontroller. Execute the program and verify the waveform using an oscilloscope.

Allocation of Marks

Sl. No	Description	Marks
1	Aim & Apparatus Required	05
2	Algorithm or Flow Chart	20
3	Program	20
4	Execution and Output/Result	25
5	MCQ from Theory Portions	20
6	Viva Voce	10
	Total	100