



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:IV
Class:SY	Program:B.Tech
Branch Code:ETC	Pattern:2023
Name of Course:Microcontrollers	Course Code:2302212
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Marks CO

Question No. 1

- 1a) Explain memory organization of 8051. (6) CO1

Question No. 2

- 2a) Explain any three addressing modes of 8051 with example. (6) CO2

Question No. 3

- 3a) Explain Port 3 of 8051 in detail. (8) CO3

OR

- 3b) Write an 8051 assembly program to turn ON an LED connected to P1.0 when a switch connected to P3.2 is pressed. (8) CO3

- 3c) Explain TCON register of 8051. (8) CO3

OR

- 3d) Write assembly program to generate square wave of 1 KHz at P1.1. (8) CO3

Question No. 4

- 4a) Draw interfacing diagram of seven segment display with 8051. Write an embedded C program to display numbers from 0 to 9 on seven segment display. (8) CO4

OR

- 4b) Draw the interfacing diagram of stepper motor with 8051 using ULN2003 driver. Write an embedded C program to rotate the motor in full-step mode. (8) CO4

- 4c) Explain SCON and SBUF register of 8051 UART. (8) CO4

OR

- 4d) Explain the interfacing of ADC0808 with 8051 with neat diagram. (8) CO4

Question No. 5

5a) Explain the pipeline architecture used in PIC18 microcontrollers (8) CO5

OR

5b) Explain the interrupt structure of PIC18FXX microcontroller. (8) CO5

5c) Draw and explain the pinout diagram of PIC18F452 (8) CO5

OR

5d) Explain data memory organization in PIC18FXX with bank structure. (8) CO5

..... **End of question paper**.....