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:V
Class:TY	Program:B.Tech
Branch Code:ROB	Pattern:2023
Name of Course:Microprocessors and Microcontrollers	Course Code:2312303
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 02 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)	Enlist & Explain main features of 8085 Microprocessor	(6)	CO1
Question No. 2			
2a)	Describe any six major functional units of the 8085 with roles	(6)	CO1, CO2
Question No. 3			
3a)	Draw and explain in detail Pin diagram of 8051 microcontroller	(8)	CO4
	OR		
3b)	Comparison of 8051 with other controllers	(8)	CO4
3c)	With appropriate diagrams explain in details all Modes associated with Timer in 8051 Microcontroller	(8)	CO4
	OR		
3d)	**What is a Timer? Explain in detail the structure of the TCON Register in 8051 microcontroller along with diagrams**	(8)	CO4
Question No. 4			

4a)	Write an Embedded C program where: A push button is connected to P2.0 and An LED is connected to P2.1 Your program must: Configure P2.0 as input and P2.1 as output Continuously check the button value inside a If the button is pressed, turn ON the LED and If the button is not pressed, turn OFF the LED	(8)	CO2
	OR		
4b)	Explain Data Transmission & Reception in Mode 2 9-bit UART & Mode 3 UART communication	(8)	CO2
4c)	Draw and Explain SCON Serial control register in detail also define Special Function Registers	(8)	CO2
	OR		
4d)	List and explain the data types and operators in Embedded C.	(8)	CO2
Question No. 5			
5a)	Write an Embedded C Program to interface Seven Segment Display with 8051 also draw the interfacing diagram	(8)	CO3, CO4
	OR		
5b)	Draw and Explain SBUF and PCON Registers	(8)	CO3, CO4
5c)	Explain the 4 serial modes of serial communication which are set in the SCON register	(8)	CO3, CO4
	OR		
5d)	Explain the SPI protocol along with the multi-slave single master structure of SPI along with the diagram	(8)	CO3, CO4

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