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:VI
Class:TY	Program:B.Tech
Branch Code:ETC	Pattern:2022
Name of Course:Embedded Processor	Course Code:ETC223011
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 pages.
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 the basic differences between RISC and CISC architectures, highlighting the advantages of RISC.	(6)	1
Question No. 2			
2a)	Explain the basic operation of an Integrated Development Environment (IDE) for embedded systems. What are the key features an IDE must have for effective embedded system development?	(6)	2
Question No. 3			
3a)	Discuss the use of the Timer module in delay generation with an example code fragment.	(8)	3
	OR		
3b)	Draw the interfacing diagram and write an embedded C program to interface an LED with the LPC2148 microcontroller.	(8)	3
3c)	What is the function of the System Control Block in the LPC2148? Discuss its role in managing the system clock and peripheral interfaces?	(8)	3
	OR		
3d)	Explain the ARM core data flow model. Describe how data is transferred between the processor, memory, and peripherals.	(8)	3
Question No. 4			
4a)	List and explain the LCD initialization commands. Draw the interfacing diagram for LCD–LPC2148	(8)	4
	OR		
4b)	Write specification of on-chip DAC and ADC in the LPC2148 microcontroller	(8)	4
4c)	Interface LM34 to ADC of the LPC2148 and initialize ADC to read temperature.	(8)	4
	OR		
4d)	Explain how a servo motor can be controlled using an LPC2148 microcontroller.	(8)	4

Question No. 5

5a)	Interface GPS module to the UART pins of the LPC2148.	(8)	5

OR

5b)	Write code to read and write data to an EEPROM using I2C in LPC2148.	(8)	5
5c)	Write the code to read the current time and date from an RTC using SPI in LPC2148.	(8)	5

OR

5d)	Explain UART configuration and describe how characters are transmitted/received in LPC2148.	(8)	5

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