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:III
Class:SY IT	Program:B.Tech
Branch Code:INT	Pattern:2023
Name of Course:Programming Paradigms & Methodology	Course Code:2308203
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 TWO 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 reasons to learn Programming Languages.	(6)	CO4
Question No. 2			
2a)	What are four categories of sequence control? Explain in brief.	(6)	CO2
Question No. 3			
3a)	Explain and draw the resulting quilt for the expression sew(turn(a),sew(a,b)) using the symbolic representation of the Little Quilt language. Explain each step of the operation.	(8)	CO5
	OR		
3b)	Explain the granularity of task decomposition in parallel algorithms. Differentiate between fine-grain and coarse-grain decomposition with suitable examples.	(8)	CO5
3c)	Discuss the concepts of : Closure, Higher-order function, Immutable Data, Modularity in Functional Programming.	(8)	CO5
	OR		
3d)	Explain the concept of a Recursive Function in Little Quilt Functional Programming Language. Write suitable code and explain the process of recursion step by step.	(8)	CO5
Question No. 4			
4a)	Explain the syntax analysis phase of a compiler in detail. Draw the parse tree for the expression (x / 4 + y - 60) * z.	(8)	CO1
	OR		
4b)	Explain Context Free Grammar (CFG). Construct Syntrax tree using CFG of arithmetic expression (given below) for a + 20 * c. 1. Expr→ Expr Op Expr 2. Expr→ number	(8)	CO1

3. Expr→ id

4. Op→ + | - | * | /

4c)	Explain Code Motion optimization, Strength Reduction, Dead Code Elimination, Copy Propagation with a suitable code example.	(8)	CO1

OR

4d)	Explain the phases of a compiler. Draw a diagram showing all phases and briefly describe each.	(8)	CO1

Question No. 5

5a)	Explain terms with respect to database programming: **Table, Row, Column, SQL.**	(8)	CO3

OR

5b)	Describe client-server and peer-to-peer communication models. Include suitable examples for each.	(8)	CO3
5c)	Explain Byte and Character streams classes in Java File programming.	(8)	CO3

OR

5d)	Describe Windows Forms in programming, including their properties and events. Also, mention the commonly used controls and their purposes.	(8)	CO3

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