

Total No. of Questions : [4]

Total No. of Printed Pages: [2]

PRN No.	
---------	--

PAPER CODE	U124-384
------------	----------

May 2024 (ENDSEM) EXAM

F.Y.B. TECH. (SEMESTER - II)

**COURSE NAME: FUNDAMENTALS
OF DATA STRUCTURES**

Branch: Computer Engineering- COURSE CODE : SE12234
Software Engineering
(PATTERN 2023)

Time: [1Hr. 30 Min]

[Max. Marks: 40]

(*) Instructions to candidates:

- 1) **Figures to the right indicate full marks.**
- 2) **Use of scientific calculator is allowed**
- 3) **Use suitable data wherever required**
- 4) **All questions are compulsory. Solve any one sub question from each Question 1 and 2 and any three sub questions each from Questions 3 and 4.**

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Discuss the Concept of Abstract Data Type (ADT) with Real Time Scenario ?	[5]	1	UNDERSTAND
	b) Given an array, arr[1...10][1...15] with base value 100 and the size of each element is 1 Byte in memory. Compute the address of arr[8][6] with the help of row-major order.	[5]	1	UNDERSTAND
Q.2	a) Describe Merge Sort Algorithm with its Advantages?	[5]	2	REMEMBER
	b) State Linear and Binary Search algorithm with Examples?	[5]	2	REMEMBER
Q.3	a) Demonstrate the Concept of Singly Linked List with insertion of Node at End in detail ?	[5]	3	APPLY
	b) Illustrate the Concept of Singly Linked List with deletion of Node at Front in detail?	[5]	3	APPLY
	c) Interpret the concept of Doubly Linked List with insertion of Node at End?	[5]	3	APPLY
	d) Implement the concept of Circular Linked List with insertion of Node at Any Position?	[5]	3	APPLY
Q.4	a) Illustrate Stack Implementation Using Linked List?	[5]	4	APPLY
	b) Translate the given Infix to Postfix Expression? (A + B * (C - D)) / E.	[5]	4	APPLY
	c) Illustrate Implementation of queue using Array?	[5]	4	APPLY

	d) Demonstrate the Enqueue and Dequeue operations of Queue with proper example?	[5]	4	APPLY
--	---	-----	---	-------