

Total No. of Questions – [1]

Total No. of Printed Pages: 1

PRN No.	
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PAPER CODE	U124-364
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**MARCH-2024 (INSEM) EXAM**

**FY.B. TECH (COMPUTER SCIENCE & ENGINEERING- DATA SCIENCE)**

**(AY 2023-24 SEMESTER - II)**

**COURSE NAME: FUNDAMENTALS TO DATA STRUCTURE & ALGORITHM**

**COURSE CODE: CD12234**

**(PATTERN 2023)**

**Time: [40 Min]**

**[Max. Marks: 20]**

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) Solve any two sub questions from Question 1 and 2.

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Differentiate between 1. Linear and non-linear data structures 2. Static and dynamic data structure	[5]	1	Understand
	b) Find Time complexity of below Code var a = 0, b = 0, i, j, k, N; for (i = 0; i < N; i++) { for (j = 0; j < N; j++) { a = a + j; } for (k = 0; k < N; k++) b = b + k; }	[5]	2	Understand
	c) Explain different asymptotic notations? How do they help in expressing the efficiency of algorithms?	[5]	2	Understand
Q 2	a) Describe the storage representation of arrays using row-major and column-major arrangements. How is the address calculated in an array data structure?	[5]	2	Understand
	b) Describe the process of finding the transpose of a sparse matrix. Provide a step-by-step explanation With Examples	[5]	2	Understand
	c) Write C++ Program for Addition, Substition, Multiplication of two Matrices?	[5]	2	Understand

