AD3251 – DATA STRUCTURES DESIGN:

UNIT 1

PART-A

- **ADT /** Python classes / **namespaces / Recursion**
- **Operator Overloading** / Recursive & non-Recursive algorithm

PART-B

- **Inheritance**
- **Asymptotic notation**
- Analyzing recursive algorithm
- **Types of copy (Shallow / Deep)**

UNIT 2

PART-A

- **circular linked list**
- **Array /** Queue
- Applications of lists / **Advantages / Disadvantages of linked list**
- list **/stack /** queue **ADT**

PART-B

- **Single** / **Double linked list**
- Implementation of stack & queue
- Double ended queue

UNIT 3

PART-A

- **Binary** / Linear Search
- **Hashing / Rehashing /** Load Factors

PART-B

- **Bubble / Selection / Merge** / Insertion / Quick sort
- **Collision handling**

UNIT 4

PART-A

- **Heaps**
- AVL Trees

PART-B

- **Binary /** Multiway **search tree**
- Tree Traversal **/ Binary Tree ADT**

UNIT 5

PART-A

- **Prims / Kruskal Algorithm**
- Dijkstra Shortest Path Algorithm
- **DAG / Graph ADT**

PART-B

- **Topological Ordering**
- **Minimum Spanning Tree / Graph Traversal**
- **Breadth** / Depth First search