Sr. No.	Topic Name
1	Introduction: Basic Terminology, Types and application of Data Structures,
2	Algorithm, Efficiency of an algorithm, Time-space trade-off and complexity,
3	asymptotic notation.
4	Array: Single and Multidimensional Arrays, Representation of Arrays: Row Major Order, and Column Major Order,
5	Derivation of Index Formulae for 1-D,2-D, and multi-D Array,
6	Application of arrays, Sparse Matrices, and their representations,
7	arithmetic operations on matrices.
8	Recursion: Tail recursion, Head Recursion,
9	Nested recursion, Removal of recursion.
10	Problem solving using iteration and recursion with examples such as Fibonacci numbers, and
11	Hanoi towers.
12	Trade-offs between iteration and recursion.
13	Searching & Sorting: Linear search, Binary Search,
14	Indexed Sequential search, Hashing,
15	Insertion Sort, Bubble sort,
16	Selection sort,
17	Quick Sort,
18	Merge Sort.
19	Linked lists: Introduction, Singly Linked Lists, Doubly Linked List, Circularly Linked List,
20	Operations on a Linked List. Insertion, Deletion, Traversal, Reversing,
21	Application of Linked List: Polynomial Representation, Addition and
22	Multiplication, Generalized Linked List.
23	Stack: Introduction, Abstract Data Type, Primitive Stack operations: Push & Pop,
24	Array and Linked List Implementation of Stack,
25	Application of Stack: Prefix and
26	Postfix Expressions,
27	Evaluation of postfix expression.
28	Queue: Introduction, Operations on Queue: Create, Add, Delete, Full and Empty,
29	Circular queues, Array and linked implementation of queues,
30	Double Ended queue, and
31	Priority Queue.
32	Trees: Binary Tree and Its array and linked list representation,
33	Strict Binary Tree, Complete Binary Tree,
34	Tree Traversal algorithms: In-order, Pre-order, and
35	Post-order, level order,
36	Constructing Binary Tree from given Tree Traversal,
37	BST Operation: Searching, Insertion, Deletion,
38	Threaded Binary Trees, Traversals in Threaded Binary Trees,
39	Heaps, Heap Sort.
40	Graph-Introduction to graph, Concepts, and representation.
41	Revision and Problem Discussion