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| **S no** | **Periods** | **Topic to be covered** |
| 1 | 1 | Introduction of subject |
| **UNIT-I** | | |
| 2 | 1 | Introduction, linear list |
| 3 | 1 | Array based representation and operations |
| 4 | 1 | Pointers addressing concepts |
| 5 | 1 | linked representation and operations |
| 6 | 1 | Comparison between Arrays and linked lists Searching |
| 7 | 1 | Linear search and Binary search |
| 8 | 1 | Sorting: Bubble sort |
| 9 | 1 | Selection sort |
| 10 | 1 | Insertion sort |
| 11 | 1 | Quick sort |
| 12 | 1 | Merge sort |
| **UNIT-II** | | |
| 13 | 1 | Single linked list – Creation, Insertion |
| 14 | 1 | Single linked list – deletion, display |
| 15 | 1 | Doubly linked list – Creation, Insertion |
| 16 | 1 | Doubly linked list – deletion, display |
| 17 | 1 | Circular linked list – Creation, Insertion |
| 18 | 1 | Circular linked list – deletion, display |
| **UNIT-III** | | |
| 19 | 1 | stacks- definition and operations, array implementation |
| 20 | 1 | Stacks implementation with linked list |
| 21 | 1 | Applications: recursion, the reverse of a string |
| 22 | 1 | Exercise on evaluating mathematical expressions, notations |
| 23 | 1 | Conversion of infix to postfix, Evaluation of postfix |
| 24 | 1 | Queues- definition and operations, array implementation |
| 25 | 1 | Queues implementation with arrays |
| 26 | 1 | Queues implementation with linked list |
| 27 | 1 | Circular Queues, De-queues and |
| 28 | 1 | priority queues and Queues applications |
| **UNIT-IV** | | |
| 29 | 1 | Trees: Definitions and properties |
| 30 | 1 | Representation of binary trees |
| 31 | 1 | Binary tree traversals |
| 32 | 1 | Binary search tree, operations |
| 33 | 1 | Binary search tree, operations |
| 34 | 1 | AVL tree, operations |
| 35 | 1 | AVL operations, rotations |
| 36 | 1 | Heap sort |
| 37 | 1 | Examples and problems |
| **UNIT-V** | | |
| 38 | 1 | Data structure for graphs , properties, types and definitions |
| 39 | 1 | Representation: Adjacency list and Adjacency matrix |
| 40 | 1 | Graph traversals: BFS and BFS implementation |
| 41 | 1 | Graph traversals: DFS and DFS implementation |
| 42 | 1 | Directed acyclic graph, Spanning trees examples |
| 43 | 1 | Minimum spanning tree-prims and kruskal’s algorithms |
| 44 | 1 | shortest path algorithms and examples |
| 45 | 1 | Single source and all pairs shortest path algorithms |

