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**Chapter 6 : Recursion and Storage Management****6-1 to 6-8**

**Syllabus :** Recursion: Writing a recursive function, Flow of control in recursive functions, Winding and unwinding phase, Recursive data structures, Implementation of recursion. Tail recursion. Indirect and Direct Recursion. Storage Management: Sequential Fit Methods: First Fit, Best Fit and Worst Fit methods. Fragmentation, Freeing Memory, Boundary Tag Method. Buddy Systems: Binary Buddy System, Fibonacci Buddy System. Compaction, Garbage Collection.

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**Chapter 7 : Searching and Sorting****7-1 to 7-53**

**Syllabus :** Searching: Sequential Search, Binary Search. Hashing: Hash Functions: Truncation, Mid-square Method, Folding Method, Division Method. Collision Resolution: Open Addressing: Linear Probing, Quadratic Probing, Double Hashing, Separate Chaining Bucket Hashing. Analysis of all searching techniques Sorting: Insertion sort, Selection sort, Merge sort, Quick sort and Radix sort. Analysis of all sorting techniques

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## Chapter 8 : Applications of Data Structures 8-1 to 8-49

**Syllabus :** Applications of Linked Lists: Addition of 2 Polynomials and Multiplication of 2 polynomials. Applications of Stacks: Reversal of a String, Checking validity of an expression containing nested parenthesis, Function calls, Polish Notation: Introduction to infix, prefix and postfix expressions and their evaluation and conversions. Application of Queues: Scheduling, Round Robin Scheduling Applications of Trees: Huffman Tree and Heap Sort. Applications of Graphs: Dijkstra's Algorithm, Minimum Spanning Tree: Prim's Algorithm, Kruskal's Algorithm.

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