**List of Programs Practical Exam**

**Divide & Conquer**

1. Finding the maximum & minimum **O(n)**
2. Merge sort **O(nlogn)**
3. Quicksort **O(n^2)**
4. Multiplication of Long Integers O(n^log3)
5. Strassen’s matrix multiplication O(n^2.8)

**The Greedy Method**

1. Optimal storage of tapes O(nlogn)
2. Fractional Knapsack problem O(nlogn)
3. Job Scheduling problems O(nlogn)
4. Subset cover problem O(logn)
5. Container loading problem O(nlogn)
6. Coin changing problem O(nlogn)
7. MST using Kruskal’s algorithm O(ElogV)
8. Dijkstra’s Algorithm O(V^2)

**Dynamic Programming**

1. Computing binomial coefficients O(n\*k)
2. Coin Changing problem O(m\*n)
3. Matrix Chain Multiplication O(n^3)
4. 0/1-Knapsack O(n\*w)
5. Johnson’s Algorithm for 2 machines scenarios O(nlogn)
6. Johnson’s Algorithm for 3 machines scenarios O(nlogn)
7. Longest Common Subsequence (LCS) O(n\*m)
8. Multistage graphs **O(n^2)**

**Backtracking**

1. N–queen problem O(N!)
2. Sum of subsets
3. Knapsack problem
4. Generating permutation O(N!)
5. Graph coloring O(m^V)
6. Hamiltonian cycle in graph

**Branch-and-Bound**

1. 15-puzzle problem O(N^2)
2. LC Branch-and-bound job sequencing problem
3. LC branch and bound algorithm for 0/1-Knapsack problem O(2^n)