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| Algorithms | |
| **SOURCE: 01** | **Design and Analysis of Algorithms (GATE EXAM)** |
| 01 | [Introduction to Algorithm and Syllabus](https://www.youtube.com/watch?v=u8JZ9gU5o4g&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=1&pp=iAQB) |
| 02 | [What is Algorithm | How to Analyze an Algorithm | Prior vs Posteriori Analysis](https://www.youtube.com/watch?v=itbkP50iggM&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=2&pp=iAQB) |
| 03 | [Asymptotic Notations | Big O | Big Omega | Theta Notations](https://www.youtube.com/watch?v=7dz8Iaf_weM&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=3&pp=iAQB) |
| 04 | [Various Properties of Asymptotic Notation with Examples](https://www.youtube.com/watch?v=OLttwv_4Ltw&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=4&pp=iAQB) |
| 05 | [Comparison of Various Time Complexities | Different Types in Increasing Order](https://www.youtube.com/watch?v=19N3gWGBh5E&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=5&pp=iAQB) |
| 06 | [Time Complexities of All Searching and Sorting Algorithm](https://www.youtube.com/watch?v=gBz44smaa9A&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=6&pp=iAQB) |
| 07 | [Question on Comparison of Various Time Complexities](https://www.youtube.com/watch?v=EH8wQaRI6YE&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=7&pp=iAQB) |
| 08 | [Question on Comparison of Various Time Complexities](https://www.youtube.com/watch?v=tVJdWy5NKW0&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=8&pp=iAQB) |
| 09 | [What is Recurrence Relation | How to Write Binary Search Recurrence Relation](https://www.youtube.com/watch?v=NW-naslChdo&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=9&pp=iAQB) |
| 10 | [Recurrence Relation [T(n)=T(n/2)+c] | Substitution Method](https://www.youtube.com/watch?v=x0n75VFd31U&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=10&pp=iAQB) |
| 11 | [Recurrence Relation [T(n)=n\*T(n-1)] | Substitution Method](https://www.youtube.com/watch?v=icS-e8RaCyo&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=11&pp=iAQB) |
| 12 | [Recurrence Relation [T(n)=2T(n/2)+n] | Substitution Method](https://www.youtube.com/watch?v=VHGisohk3Ck&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=12&pp=iAQB) |
| 13 | [Recurrence Relation [T(n)=T(n-2)+logn] | Substitution Method](https://www.youtube.com/watch?v=JCX8noGdY7k&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=13&pp=iAQB) |
| 14 | [Recurrence Relation [T(n)=8T(n/2)+n^2] | Master Theorem](https://www.youtube.com/watch?v=FBKjvXGGCJM&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=14&pp=iAQB) |
| 15 | [Recurrence Relation [T(n)=T(n/2)+c] | Master Theorem](https://www.youtube.com/watch?v=nNabmfua14c&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=15&pp=iAQB) |
| 16 | [Recurrence Relation [T(n)=T(/n)+logn] | Master Theorem](https://www.youtube.com/watch?v=gazsHlpcfCE&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=16&pp=iAQB) |
| 17 | [Recurrence Relation [T(n)=2T(n/2)+cn] | Recursive Theorem](https://www.youtube.com/watch?v=bJg_sv7PV-g&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=17&pp=iAQB) |
| 18 | [Recurrence Relation [T(n)=3T(n/4)+cn^2] | Recursive Theorem](https://www.youtube.com/watch?v=zeVYepdQ9lY&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=18&pp=iAQB) |
| 19 | [Divide and Conquer Algorithm](https://www.youtube.com/watch?v=I8w2XN0w-fQ&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=19&pp=iAQB) |
| 20 | [How Quick Sort Words | Performance of Quick Sort with Example](https://www.youtube.com/watch?v=tWCaFVJMUi8&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=20&pp=iAQB) |
| 21 | [Performance of Quick Sort | Worst Case Time Complexity with Example](https://www.youtube.com/watch?v=eN4RBi4pMvI&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=21&pp=iAQB) |
| 22 | [How Merge Sort Works, Full Explanation with Example](https://www.youtube.com/watch?v=tn9hxD8gx2M&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=22&pp=iAQB) |
| 23 | [Merge Sort Pseudocode | Merge Sort with Example](https://www.youtube.com/watch?v=aeI8GGtiLGg&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=23&pp=iAQB) |
| 24 | [Question on Merge Sort | Divide and Conquer | Algorithm](https://www.youtube.com/watch?v=Ms8g8w-6r2Q&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=24&pp=iAQB) |
| 25 | [How Bubble Sort Works | Performance of Bubble Sort with Examples](https://www.youtube.com/watch?v=re9ytVtt5zg&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=25&pp=iAQB) |
| 26 | [Insertion Sort | Time Complexity Analysis | Stable Sort | In-place Sorting](https://www.youtube.com/watch?v=s9fmGjFY1v0&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=26&pp=iAQB) |
| 27 | [Selection Sort | Time Complexity (Best, Avg and Worst) Analysis](https://www.youtube.com/watch?v=Lrd1QaKyok4&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=27&pp=iAQB) |
| 28 | [Radix Sort | Easiest Explanation with Example](https://www.youtube.com/watch?v=9QSgBO9yjKU&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=28&pp=iAQB) |
| 29 | [Counting Sort | Easiest Explanation with Example](https://www.youtube.com/watch?v=mowMVn9wTnE&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=29&pp=iAQB) |
| 30 | [Bucket Sort | Easiest Explanation | Time Complexity Analysis with Pseudocode](https://www.youtube.com/watch?v=E9OccfF9mpI&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=30&pp=iAQB) |
| 31 | [Introduction to Trees (Binary Tree, Almost Complete Binary Tree | Full BT | Complete BT)](https://www.youtube.com/watch?v=I_JuQ5ayPmc&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=31&pp=iAQB) |
| 32 | [Introduction to Heap Tree with Examples | Max Min Heap](https://www.youtube.com/watch?v=uuot9ItgTEI&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=32&pp=iAQB) |
| 33 | [Insertion in Heap Tree | Max-Heap and Min-Heap Creation | Time Complexity](https://www.youtube.com/watch?v=KzXpfxRzVQM&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=33&pp=iAQB) |
| 34 | [Question on Max Heap / Min Heap](https://www.youtube.com/watch?v=7gWrUhQxFIU&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=34&pp=iAQB) |
| 35 | [Build Heap in O(n) Time Complexity | Heapify Method | Full Derivation with Example](https://www.youtube.com/watch?v=8noP3YjjJCM&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=35&pp=iAQB) |
| 36 | [Deletion in Heap Tree | Time Complexity](https://www.youtube.com/watch?v=4GsxDWMI7tQ&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=36&pp=iAQB) |
| 37 | [Heap Sort with Example | Heapify Method](https://www.youtube.com/watch?v=nJ6FdAIr_6g&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=37&pp=iAQB) |
| 38 | [Introduction to Greedy Techniques with Example | What is Greedy Technique](https://www.youtube.com/watch?v=v0eQ4nXJjsk&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=38&pp=iAQB) |
| 39 | [Knapsack Problem with Example | Greedy Techniques](https://www.youtube.com/watch?v=M79iHjAG1tg&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=39&pp=iAQB) |
| 40 | [Huffman Coding Algorithm with Example | Greedy Techniques](https://www.youtube.com/watch?v=uDS8AkTAcIU&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=40&pp=iAQB) |
| 41 | [Question Huffman Coding in Greedy Technique](https://www.youtube.com/watch?v=ocFO1rmh4Zc&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=41&pp=iAQB) |
| 42 | [Job Sequencing Algorithm with Example | Greedy Techniques](https://www.youtube.com/watch?v=Tpp7o0jQ-8w&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=42&pp=iAQB) |
| 43 | [Optimal Merge Pattern Using Greedy Method](https://www.youtube.com/watch?v=C7me2iKbty4&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=43&pp=iAQB) |
| 44 | [What is Spanning Tree with Example](https://www.youtube.com/watch?v=h6cUkkaKNHw&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=44&pp=iAQB) |
| 45 | [Kruska Algorithm for Minimum Spanning Tree](https://www.youtube.com/watch?v=huQojf2tevI&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=45&pp=iAQB) |
| 46 | [Prim’s Algorithm for Minimum Cost Spanning Tree](https://www.youtube.com/watch?v=_KX8GDvRzBc&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=46&pp=iAQB) |
| 47 | [Dijkstra’s Algorithm Single Source Shortest Path – Greedy Method](https://www.youtube.com/watch?v=Gd92jSu_cZk&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=47&pp=iAQB) |
| 48 | [Dijkstra’s Algorithm Analysis | Time Complexity | Pseudocode Explanation](https://www.youtube.com/watch?v=_0s2e5SqhSk&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=48&pp=iAQB) |
| 49 | [Why Does Dijkstra Fail on Negative Weights | Full Explanation with Example](https://www.youtube.com/watch?v=R3g2SSlyY_0&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=49&pp=iAQB) |
| 50 | [Bellman Ford Algorithm | Dijkstra vs Bellman Ford | Single Source Shortest Path](https://www.youtube.com/watch?v=SiI03wnREt4&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=50&pp=iAQB) |
| 51 | [Bellman Ford Pseudocode and Time Complexity | Single Source Shortest Path](https://www.youtube.com/watch?v=0hXj05XXT7M&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=51&pp=iAQB) |
| 52 | [BFS and DFS | Breadth First Search | Depth First Search | Graph Traversing | DAA](https://www.youtube.com/watch?v=N2P7w22tN9c&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=52&pp=iAQB) |
| 53 | [Introduction to Dynamic Programming | Greedy vs Dynamic Programming](https://www.youtube.com/watch?v=0BhhiQGDbEA&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=53&pp=iAQB) |
| 54 | [0/1 Knapsack Failed Using Greedy Approach](https://www.youtube.com/watch?v=LveF2qwHrqU&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=54&pp=iAQB) |
| 55 | [0/1 Knapsack Problem | Dynamic Programming | Recursion Equation | Recursion Tree](https://www.youtube.com/watch?v=i8NqAEsZn54&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=55&pp=iAQB) |
| 56 | [Traveling Salesman Problem | Dynamic Programming](https://www.youtube.com/watch?v=3QiSyc7KyC4&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=56&pp=iAQB) |
| 57 | [Sum of Subsets Problem | Dynamic Programming](https://www.youtube.com/watch?v=MLSy2_iQdmY&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=57&pp=iAQB) |
| 58 | [Multistage Graph | Dynamic Program](https://www.youtube.com/watch?v=PE1wsnvbquA&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=58&pp=iAQB) |
| 59 | [Introduction to All Pair Shortest Path (Floyd Warshall Algorithm)](https://www.youtube.com/watch?v=c5vQS40VBcU&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=59&pp=iAQB) |
| 60 | [Floyd Warshall Working with Example | All Pair Shortest Path Algorithm](https://www.youtube.com/watch?v=pgNE06YbDZ8&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=60&pp=iAQB) |
| 61 | [Floyd Warshall Time and Space Complexity | All Pair Shortest Path Algorithm](https://www.youtube.com/watch?v=HAFAD8XbXps&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=61&pp=iAQB) |
| 62 | [What is Hashing with Example | Hashing in Data Structure](https://www.youtube.com/watch?v=W5q0xgxmRd8&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=62&pp=iAQB) |
| 63 | [Collision Resolution Techniques in Hashing | What are the Collision Resolution](https://www.youtube.com/watch?v=j612Fj-mgCY&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=63&pp=iAQB) |
| 64 | [Chaining in Hashing | What is Chaining in Hashing with Example](https://www.youtube.com/watch?v=hmMYPZ5wLX0&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=64&pp=iAQB) |
| 65 | [Linear Probing in Hashing with Example](https://www.youtube.com/watch?v=ZEyPqqRTO00&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=65&pp=iAQB) |
| 66 | [Question on Hashing | Linear Probing for Collision in Hash Table](https://www.youtube.com/watch?v=go45eeMrwA4&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=66&pp=iAQB) |
| 67 | [Quadratic Probing in Hashing with Example](https://www.youtube.com/watch?v=-yQ2Kj-Jn0A&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=67&pp=iAQB) |
| 68 | [Double Hashing | Collision Resolution Technique](https://www.youtube.com/watch?v=1P7ygNSe9lY&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=68&pp=iAQB) |
| 69 | [Topological Sorting with Example | Topological Sorting using DFS |](https://www.youtube.com/watch?v=3tkcfvCNtM8&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=69&pp=iAQB) |
| 70 | [Kahn’s Algorithm | Topological Sorting | DAA](https://www.youtube.com/watch?v=96owfLr89Lk&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=70&pp=iAQB) |
| 71 | [Branch and Bound Algorithm with Example | Easiest Explanation of B&B with Example](https://www.youtube.com/watch?v=XZbrmetb9VE&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=71&pp=iAQB) |
| 72 | [0/1 Knapsack Using Branch and Bound with Example](https://www.youtube.com/watch?v=CwM-Mv0Bm4Y&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=72&pp=iAQB) |
| 73 | [Shortcut for Swaps in Bubble Sorting | Best Case | Worst Case](https://www.youtube.com/watch?v=2jhN6aazfSQ&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=73&pp=iAQB) |
| 74 | [Optimized Bubble Sort | Best Case | O(n) Time Complexity | Shorting Algorithm](https://www.youtube.com/watch?v=g6hr8B3OWio&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=74&pp=iAQB) |
| 75 | [Recurrence Relation [T(n)=2T(n/2)+2] Min-Max Algorithm](https://www.youtube.com/watch?v=EnIuY1GpG3g&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=75&pp=iAQB) |
| 76 | [Min-Max Algorithm without Divide and Conquer | Linear Approach | Find Max and Min](https://www.youtube.com/watch?v=rJAsiBW0oZ0&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=76&pp=iAQB) |
| 77 | [Min-Max Algorithm with Divide and Conquer](https://www.youtube.com/watch?v=g8DJiGWoQmk&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=77&pp=iAQB) |
| 78 | [Time Complexity and Comparison of All Data Structures](https://www.youtube.com/watch?v=1lqoJ-NSmDE&list=PLxCzCOWd7aiHcmS4i14bI0VrMbZTUvlTa&index=78&pp=iAQB) |