**Basics of Algorithm**

1. **Graph algorithms**: Breadth first search (BFS), Depth first search (DFS), Strongly connected components (SCC), Dijkstra, Floyd-Warshall, Minimum spanning tree (MST), Topological sort.
2. **Dynamic programming**: Standard dynamic programming problems such as Rod Cutting, Knapsack, Matrix chain multiplication etc.
3. **Number theory**: Modular arithmetic, Fermat’s theorem, Chinese remainder theorem (CRT), Euclidian method for GCD, Logarithmic Exponentiation, Sieve of Eratosthenes, Euler's totient function.
4. **Greedy**: Standard problems such as Activity selection.
5. **Search techniques**: Binary search, Ternary search and Meet in the middle.
6. **Data structures (Basic)**: Stacks, Queues, Trees and Heaps.
7. **Data structures (Advanced):** Trie, Segment trees, Fenwick tree or Binary indexed tree (BIT), Disjoint data structures.
8. **Strings:** Knuth Morris Pratt (KMP), Z algorithm, Suffix arrays/Suffix trees. These are bit advanced algorithms.
9. **Computational geometry:** Graham-Scan for convex hull, Line sweep.
10. **Game theory:** Basic principles of Nim game, Grundy numbers, Sprague-Grundy theorem.