

BASIC LEVEL (30 Questions)

1. Find Maximum and Minimum in an Array
2. Reverse an Array
3. Sum of All Elements
4. Check if Array is Sorted
5. Linear Search
6. Binary Search
7. Count Occurrences of an Element
8. Find Second Largest and Second Smallest Element
9. Remove Duplicates from Array
10. Rotate Array by K Positions
11. Merge Two Sorted Arrays
12. Check if Array is Palindromic
13. Find Frequency of Each Element
14. Sum of Even and Odd Elements Separately
15. Replace Negative Numbers with Zero
16. Find Index of First Occurrence
17. Find Index of Last Occurrence
18. Count Even and Odd Numbers
19. Swap Two Elements in Array
20. Copy Array to Another Array
21. Reverse Array in Groups of K Elements
22. Find Sum of All Pairs
23. Find Pair with Given Sum
24. Count Pairs with Given Difference
25. Check for Duplicate Elements
26. Remove Specific Element from Array
27. Find Maximum Difference Between Two Elements
28. Separate Positive and Negative Numbers
29. Find Minimum Swaps to Bring Elements Together
30. Left and Right Rotate Array by One Position

INTERMEDIATE LEVEL (40 Questions)

1. Kadane's Algorithm – Maximum Subarray Sum
2. Two Sum Problem
3. Product of Array Except Self (No Division)
4. Find Duplicates in an Array
5. Move All Zeros to End

6. Trapping Rain Water Problem
7. Subarray with Given Sum
8. Majority Element in an Array
9. First Missing Positive Number
10. Maximum Product Subarray
11. Count Inversions in Array
12. Find Longest Consecutive Sequence
13. Merge Overlapping Intervals
14. Find Pythagorean Triplet
15. Maximum Sum of $i \cdot \text{arr}[i]$
16. Rotate Matrix by 90 Degrees
17. Spiral Order Traversal
18. Diagonal Sum of Matrix
19. Sum of Boundary Elements
20. Search in Row-Column Sorted Matrix
21. Rearrange Array in Alternating Positive & Negative
22. Count Subarrays with Sum = K
23. Find Duplicate Number (Floyd's Cycle Detection)
24. Maximum Circular Subarray Sum
25. Count Subarrays with XOR = K
26. Maximum Length of Subarray with 0 Sum
27. Subarray with Equal 0s and 1s
28. Minimum Number of Jumps to Reach End
29. Find Element with Frequency More than $n/3$
30. Count Triplets with Sum Less than X
31. Find All Leaders in an Array
32. Maximum Difference Between Two Elements ($i < j$)
33. Find Equilibrium Index
34. Maximum Sum Rectangle in 2D Matrix
35. Count Number of Submatrices With All 1s
36. Largest Sum Rectangle in Binary Matrix
37. Find Common Elements in 3 Sorted Arrays
38. Maximum Product of Two Elements
39. Maximum Sum of Length K Subarray
40. Rearrange Array Such That $\text{arr}[i] = i$

ADVANCED / REAL WORLD INTERVIEW QUESTIONS

(40+ Questions)

1. Sliding Window Maximum
2. Longest Subarray with Sum = K
3. Find Equilibrium Index
4. Count Inversions in Array
5. Merge Intervals

6. Minimum Swaps to Sort an Array
 7. Median of Two Sorted Arrays
 8. Find Duplicates in O(1) Space
 9. Maximum Length Subarray with 0 Sum
 10. Matrix Related Questions: Spiral Print, Rotate Matrix, Search in Row-Column Sorted Matrix
 11. Maximum Product Subarray (Advanced)
 12. Minimum Size Subarray Sum
 13. Count Number of Subarrays with Sum Divisible by K
 14. Count Subarrays with Product Less Than K
 15. Subarray with Sum Closest to K
 16. Find Subarray with Given XOR
 17. Longest Subarray with K Distinct Elements
 18. Longest Subarray with Equal Number of 0s and 1s
 19. Count Triplets with Given Sum
 20. Maximum Sum Increasing Subsequence
 21. Maximum Subarray Sum Modulo M
 22. Maximum Circular Subarray Sum
 23. Maximum Sum of Non-Adjacent Elements
 24. Kth Smallest / Largest Element in Array
 25. Find Pair with Minimum Difference
 26. Count Number of Pairs with Difference K
 27. Reorder Array as Wave Form
 28. Longest Arithmetic Subsequence
 29. Count Number of Increasing Subsequences
 30. Find Subarray with Maximum Average
 31. Number of Subarrays with Bounded Maximum
 32. Find All Unique Quadruplets with Given Sum
 33. Maximum Sum of Rectangle in Matrix
 34. Minimum Cost Path in Matrix
 35. Count Squares in Binary Matrix
 36. Largest Rectangle in Histogram
 37. Maximum Sum Path in Triangle Matrix
 38. Find Duplicate Elements Without Extra Space
 39. Next Greater Element Problems
 40. Maximum Product of Three Numbers
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NOTES:

- Total Questions: 110+ covering **basic, intermediate, advanced, real-world**
- Include **Java code solution and input/output examples** for each
- Real-world problems focus on **patterns most commonly asked in Amazon, Google, Microsoft, and Meta interviews**