Java DSA Placement Sheet - Arrays, Strings, and 2D Arrays

I. Arrays (20 Questions)

1. Find the maximum and minimum element in an array

2. Reverse an array in place

3. Find the 'Kth' max and min element of an array

4. Sort an array of 0s, 1s and 2s (Dutch National Flag Problem)

5. Move all negative numbers to beginning and positive to end

6. Find Union and Intersection of two arrays

7. Cyclically rotate an array by one

8. Kadane's Algorithm - Maximum Subarray Sum

9. Check if array is sorted and rotated

10. Leaders in an array

11. Rearrange array in alternating positive & negative items

12. Count the number of occurrences of an element

13. Find all pairs with a given sum

14. Subarray with given sum (Two pointer / Sliding window)

15. Missing number in array [1 to n]

16. Find duplicate number in array

17. Find intersection of two sorted arrays

18. Trapping Rain Water

19. Merge two sorted arrays without using extra space

20. Maximum Product Subarray

II. Strings (15 Questions)

21. Reverse a string

22. Check for palindrome

23. Remove duplicates from a string

24. Print all permutations of a string

25. Check if two strings are anagrams

26. Count and say problem

27. Longest common prefix

28. Convert string to integer (like atoi)

29. Implement strstr() (substring search)

30. Valid Palindrome after removing at most one character

31. Compress the string (like Leetcode 443)

32. Longest substring without repeating characters

33. Group anagrams together

34. Check if a string is a rotation of another string

35. Check if one string is a subsequence of another

III. 2D Arrays (15 Questions)

36. Transpose of a matrix

37. Rotate matrix by 90 degrees clockwise

38. Search in a row-wise and column-wise sorted matrix

39. Spiral traversal of a matrix

40. Matrix multiplication

41. Set entire row and column to 0 if any element is 0

42. Print diagonals of a matrix

43. Snake pattern printing

44. Boundary traversal of matrix

45. Pascal's Triangle

46. Search a 2D matrix (Leetcode 74)

47. Count islands (DFS on matrix)

48. Find median in a row-wise sorted matrix

49. Maximum size rectangle of all 1s in binary matrix

50. Boolean Matrix problem (set row/column to 1 if any element is 1)