# **Problems on Arrays**

- 1. Find the smallest number in an array
- 2. Find the largest number in an array
- 3. Second Smallest and Second Largest element in an array
- 4. Reverse a given array
- 5. Count frequency of each element in an array
- 6. Rearrange array in increasing-decreasing order
- 7. Calculate sum of the elements of the array
- 8. Rotate array by K elements Block Swap Algorithm
- 9. Average of all elements in an array
- 10. Find the median of the given array
- 11. Remove duplicates from a sorted array
- 12. Remove duplicates from unsorted array
- 13. Adding Element in an array
- 14. Find all repeating elements in an array
- 15. Find all non-repeating elements in an array
- 16. Find all symmetric pairs in array
- 17. Maximum product subarray in an array
- 18. Replace each element of the array by its rank in the array
- 19. Sorting elements of an array by frequency
- 20. Rotation of elements of array- left and right
- 21. Finding equilibrium index of an array
- 22. Finding Circular rotation of an array by K positions
- 23. Sort an array according to the order defined by another array
- 24. Search an element in an array
- 25. Check if Array is a subset of another array or not

#### **Problems on Numbers**

- 1. Check if a number is palindrome or not
- 2. Find all Palindrome numbers in a given range
- 3. Check if a number is prime or not
- 4. Prime numbers in a given range
- 5. Check if a number is armstrong number of not
- 6. Check if a number is perfect number
- 7. Even or Odd
- 8. Check weather a given number is positive or negative

- 9. Sum of first N natural numbers
- 10. Find Sum of AP Series
- 11. Program to find sum of GP Series
- 12. Greatest of two numbers
- 13. Greatest of three numbers
- 14. Leap Year or not
- 15. Reverse digits of a number
- 16. Maximum and Minimum digit in a number
- 17. Print Fibonacci upto Nth Term
- 18. Factorial of a number
- 19. Power of a number
- 20. Factors of a given number
- 21. Print all prime factors of the given number
- 22. Check if a number is a strong number or not
- 23. Check if a Number is Automorphic
- 24. GCD of two numbers
- 25. LCM of two numbers
- 26. Check if a number is Harshad number
- 27. Check if the number is abundant number or not
- 28. Sum of digits of a number
- 29. Sum of numbers in the given range
- 30. Permutations in which N people can occupy R seats in a classroom
- 31. Program to add two fractions
- 32. Replace all 0s with 1s in a given integer
- 33. Can a number be expressed as a sum of two prime numbers
- 34. Calculate the area of circle
- 35. Program to find roots of a Quadratic Equation

# **Problems on Number System**

- 1. Convert Binary to Decimal
- 2. Convert binary to octal`
- 3. Decimal to Binary conversion
- 4. Convert decimal to octal
- 5. Convert octal to binary
- 6. Convert octal to decimal
- 7. Convert digits/numbers to words

## **Problems on Sorting**

- 1. Bubble Sort Algorithm
- 2. Selection Sort Algorithm
- 3. Insertion Sort Algorithm
- 4. Quick Sort Algorithm
- 5. Merge sort algorithm

## **Problems on String**

- 1. Check if a given string is palindrome or not
- 2. Count number of vowels, consonants, spaces in String
- 3. Find the ASCII value of a character
- 4. Remove all vowels from the string
- 5. Remove spaces from a string
- 6. Remove characters from a string except alphabets
- 7. Reverse a String
- 8. Remove brackets from an algebraic expression
- 9. Sum of the numbers in a String
- 10. Capitalize first and last character of each word
- 11. Calculate frequency of characters in a string
- 12. Find Non-repeating characters of a String
- 13. Check if two strings are anagram of each other
- 14. Count common sub-sequence in two strings
- 15. Check if two strings match where one string contains wildcard characters
- 16. Return maximum occurring character in the input string
- 17. Remove all duplicates from the input string.
- 18. Print all the duplicates in the input string.
- 19. Remove characters from first string present in the second string
- 20. Change every letter with the next lexicographic alphabet in the given string
- 21. Write a program to find the largest word in a given string.
- 22. Write a program to sort characters in a string
- 23. Count number of words in a given string
- 24. Write a program to find a word in a given string which has the highest number of repeated letters
- 25. Change case of each character in a string
- 26. Concatenate one string to another

- 27. Write a program to find a substring within a string. If found display its starting position
- 28. Reverse words in a string