Easy Level Problems on Bit Manipulation:

Count Bit Sets of a Number
Count Total Set Bits of a first N natural number
Check whether the number has only first and last bits set
Shortest path length between two given nodes such that adjacent nodes are at bit difference 2
Calculate Bitwise OR of two integers from their given Bitwise AND and Bitwise XOR values
Unset least significant K bits of a given number
Find all powers of 2 less than or equal to a given number

Medium Level Problems on Bit Manipulation:

Powers-2-required-sum
Print bitwise AND set of a number N
Print all submasks of a given mask
Count of subsets not containing adjacent elements
Find array such that no subarray has xor zero or Y
Minimum Bitwise OR operations to make any two array elements equal
Minimum Bitwise XOR operations to make any two array elements equal
Minimum Bitwise AND operations to make any two array elements equal

Hard Level Problems on Bit Manipulation:

Longest substring whose characters can be rearranged to form a Palindrome
Number of ordered pairs such that (Ai & Aj) = 0
Minimize product of first N – 1 natural numbers by swapping same positioned bits of pairs
Minimum number N such that total set bits of all numbers from 1 to N is at-least X
Find a number X such that XOR of given Array after adding X to each element is 0
Count numbers in the range [L, R] having only three set bits