SDE-PROBLEMS

Day1: (Arrays)

Find the duplicate in an array of N integers.

Sort an array of 0’s 1’s 2’s without using extra space or sorting algo

Repeat and Missing Number

Merge two sorted Arrays without extra space

Kadane’s Algorithm

Merge Overlapping Subintervals

Day2: (Arrays)

Set Matrix Zeros

Pascal Triangle

Next Permutation

Inversion of Array (Using Merge Sort)

Stock Buy and Sell

Rotate Matrix

Day3: (Math)

Excel Column Number

Find n^x in log N

Count trailing zeros in factorial of a number

Find GCD in Log N

Grid Unique Paths

Go through Puzzles from GFG (Search on own)

Day4: (Hashing)

2 Sum problem

4 Sum problem

Longest Consecutive Sequence

Longest Subarray with 0 sum

Count number of subarrays with given XOR(this clears a lot of problems)

Longest substring without repeat

Day5: (LinkedList)

Reverse a LinkedList

Find middle of LinkedList

Merge two sorted Linked List

Remove N-th node from back of LinkedList

Delete a given Node when a node is given. (0(1) solution)

Add two numbers as LinkedList

Day6:

Find intersection point of Y LinkedList

Check if a LinkedList is palindrome or not.

Reverse a LinkedList in groups.

Detect a cycle and removing loop(two different questions and same concept)

Flattening of a LinkedList

Rotate a LinkedList

Clone a Linked List with random and next pointer.

Day7: (2-pointer)

Merge two sorted LinkedLists

Find the starting point of the loop.

3 sum

Trapping rainwater

Remove Duplicate from Sorted array

Max continuous number of 1’s

Day8: (Greedy)

N meeting in one room

Activity Selection

Greedy algorithm to find minimum number of coins

Fractional Knapsack Problem

Minimum number of platforms required for a railway

Job sequencing Problem

Day9: (Backtracking)

N queens Problem

Sudoko

M coloring Problem

Rat in a Maze

Print all Permutations of a string/array

Word Break (print all ways)

Day10:

Combination sum-1

Combination sum-2

Palindrome Partioning

Subset Sum-1

Subset Sum-2

K-th permutation Sequence

Day11: (Divide and Conquer)

1/N-th root of an integer (use binary search) (square root, cube root, ..)

Matrix Median

Find the element that appears once in sorted array, and rest element appears twice (Binary search)

Search element in a sorted and rotated array.

K-th element of two sorted arrays

Media of an array

Day12: (Bits) (Optional, very rare topic in interviews, but if you have time left, someone might ask)

Check if a number if a power of 2 or not in O(1)

Count total set bits

Divide Integers without / operator

Power Set (this is very important)

Find MSB in o(1)

Find square of a number without using multiplication or division operators.

Day13: (Stack and Queue)

Implement Stack / Implement Queue

BFS

Implement Stack using Queue

Implement Queue using Stack

Check for balanced parentheses

Next Greater Element

Day14:

Next Smaller Element

LRU cache (vvvv. imp)

Largest rectangle in histogram

Sliding Window maximum

Implement Min Stack

Rotten Orange (Using BFS)

Day15: (String)

Reverse Words in a String

Longest Palindrome in a string

Roman Number to Integer and vice versa

Implement ATOI/STRSTR

Longest Common Prefix

Rabin Karp

Day16: (String)

Prefix Function/Z-Function

KMP algo

Minimum characters needed to be inserted in the beginning to make it

palindromic.

Check for Anagrams

Count and Say

Compare version numbers

Day17: (Binary Tree)

Inorder Traversal (with recursion and without recursion)

Preorder Traversal (with recursion and without recursion)

Postorder Traversal (with recursion and without recursion)

LeftView Of Binary Tree

Bottom View of Binary Tree

Top View of Binary Tree

Day18: (Binary Tree)

Level order Traversal / Level order traversal in spiral form

Height of a Binary Tree

Diameter of Binary Tree

Check if Binary tree is height balanced or not

LCA in Binary Tree

Check if two trees are identical or not

Day 19: (Binary Tree)

Maximum path sum

Construct Binary Tree from inorder and preorder

Construct Binary Tree from Inorder and Postorder

Symmetric Binary Tree

Flatten Binary Tree to LinkedList

Check if Binary Tree is mirror of itself or not

Day 20: (Binary Search Tree)

Populate Next Right pointers of Tree

Search given Key in BST

Construct BST from given keys.

Check is a BT is BST or not

Find LCA of two nodes in BST

Find the inorder predecessor/successor of a given Key in BST.

Day21: (BinarySearchTree)

Floor and Ceil in a BST

Find K-th smallest and K-th largest element in BST (2 different Questions)

Find a pair with a given sum in BST

BST iterator

Size of the largest BST in a Binary Tree

Serialize and deserialize Binary Tree

Day22: (Mixed Questions)

Binary Tree to Double Linked List

Find median in a stream of running integers.

K-th largest element in a stream.

Distinct numbers in Window.

K-th largest element in an unsorted array.

Flood-fill Algorithm

Day23: (Graph)

Clone a graph (Not that easy as it looks)

DFS

BFS

Detect A cycle in Undirected Graph/Directed Graph

Topo Sort

Number of islands (Do in Grid and Graph both)

Bipartite Check

Day24: (Graph)

SCC(using KosaRaju’s algo)

Djisktra’s Algorithm

Bellman Ford Algo

Floyd Warshall Algorithm

MST using Prim’s Algo

MST using Kruskal’s Algo

Day25: (Dynamic Programming)

Max Product Subarray

Longest Increasing Subsequence

Longest Common Subsequence

0-1 Knapsack

Edit Distance

Maximum sum increasing subsequence

Matrix Chain Multiplication

Day26: (DP)

Maximum sum path in matrix, (count paths, and similar type do, also backtrack to find the maximum path)

Coin change

Subset Sum

Rod Cutting

Egg Dropping

Word Break

Palindrome Partitioning (MCM Variation)

Day27:

Revise OS notes that you would have made during your sem

If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day28:

Revise DBMS notes that you would have made during your semesters.

If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day29:

Revise CN notes, that you would have made during your sem.

If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day30:

Make a note of how will your represent your projects, and prepare all questions related to tech which you have used in your projects. Prepare a note which you can say for 3-10 minutes when he asks you that say something about the project.

Hurrah!! You are ready for your placement after a month of hard-work without a cheat day.