COMPILED **DAY**-WISE DSA SHEET

From **Siddharth Singh**

TOPIC COVERED:

Array & String
Matrix
Sorting and Searching
Linked List
Stacks and Queue
Tree

Graph
HashMap and Heap
Greedy

Dynamic Programming
Backtracking
Bit Manipulation
Tries

YOUTUBE LINK:
https://youtu.be/H6H-leye5pXk

Total Questions:
450

Time Duration:
3 - 4 Months

COLOUR CODING

	DOUBT
	EASY
	MEDIUM
	EXCELLENT

Array &String

Day 1

Squares of a sorted array	
Rotate Array	rotate-array
Relatively prime	
Napolean cake	
Next Greater Element III	next-greater-element-version3
majority element	majority element
majority element 2	majority element 2
majority element general	majority element general

Day 2

Max chunks to make sorted	max chunks to make sorted
Max Chunks To Make Sorted II	max-chunks-to-make-sorted-ii
max product of 3 numbers	max product of three numbers
largest number atleast twice of others	largest atleast twice
Product of Array Except Self	product-of-array-except-self
number of subarrays with bounded maximum	number with bounded max
maximum subarray	kadanes-algo

Day 3

K-CON	K-con
best meeting points	best meeting point
Segregate 0 and 1	Segregate 0 and 1
Segregate 0-1-2	Segregate 0,1,2
Sort Array By Parity	sort-array-by-parity
partition labels	partition labels
Check whether one string is a rotation of another	

Day 4

Maximization	Codeforces
K_LCM 1	Codeforces
K_LCM 2	Codeforces
consecutive number sum	consecutive number sum
Fast Exponentiation	
Fibonacci Number	fibonacci-number
Sieve of Eratosthenes	Sieve
Segmented sieve	segmented sieve
wiggle sort	wiggle sort
Min Jump required with +i or -i allowed	min jump
Maximum Swap	maximum-swap

Day 5

minimum domino rotation for equal row	min rotation
multiply strings	multiply strings
Two Sum	two sum
Two Difference	two difference
Boats to Save People	save-people-using-boat
smallest range from k lists	smallest from k lists
maximum product subarray	max product subarray
Min No. of Platform	min no. of platform
Reverse vowels of a string	reverse vowels of a string

Day 6

First missing positive	first missing positive
rotate image	rotate image
Minimum swaps required bring elements less equal K together	min. swaps
push dominoes	Push dominoes
valid palindrome 2	valid palindrome 2
Sum of subsequence width	sum of subsequence widths
Find the "Kth" max and min element of an array	Kth Max and min element

Day 7

maximize distance to closest person	max distance
Buddy nim	Buddy nim
bulb switcher 1	bulb switcher
interesting subarrays	interesting subarrays
Sort the array	Array sort
max sum of two non overlapping subarrays	max sum of two non overlapping
Minimize the maximum difference between heights IV IMP	Minimise max diff b/w heights

Range Related question

Day 8

Long Pressed Name	long-pressed-name
Range Addition	range-addition
Max range query	
Orderly Queue	orderly-queue
Container With Most Water	container-with-most-water

Matrix

Day 9

Spiral traversal on a Matrix	
Search an element in a matrix	
Find median in a row wise sorted matrix	
Find row with maximum no. of 1's	
Print elements in sorted order using row-column wise sorted matrix	

Day 10

Find a specific pair in matrix	
Rotate matrix by 90 degrees	
Kth smallest element in a row-column wise sorted matrix	
Common elements in all rows of a given matrix	

Sorting and Searching

Day 11

Binary search	
median of two sorted array	median of two sorted array
capacity to ship within D days	capacity to ship within D days
koko eating bananas	koko eating bananas
smallest divisor given a threshold	smallest divisor given a threshold
Painter's partition problem	painter's partition problem
split array largest sum	split array largest sum

Day 12

Median from data stream	Median from data stream
Kth smallest prime fraction	Kth smallest prime
search in rotated sorted array	search in rotated sorted array
Search in rotated sorted array 2	search in rotated sorted array 2
Find Minimum in rotated sorted array	Find Minimum in rotated sorted array
find min in rotated sorted array 2	Min. in rotated sorted array
counting sort	counting sort
merge sort	merge sort
count inversions	count inversions

Linked List

Day 13

reverse LinkedList	Reverse LinkedList
Reverse a Linked List in group of Given Size.	
Find the middle element	middle element
Floyd cycle	Detect loop in a linkedlist
Clone a linkedlist	clone
Split circular LinkedList	Split into two parts

Day 14

Intersection point of 2 linked list	Intersection point
LRU Cache	LRU Cache
Merge Sort For Linked lists [Very Important]	
Quicksort for Linked Lists [Very important]	
Write a Program to check whether the Singly Linked list is a palindrome or not.	
Sort a "k"sorted Doubly Linked list [Very IMP]	

Day 15

Rotate a Doubly Linked list in group of Given Size.[Very IMP]	
Flatten a Linked List	
Sort a LL of 0's, 1's and 2's	
Delete nodes which have a greater value on right side	
Remove Duplicates in a sorted Linked List.	
Add two numbers represented by linked lists.	

Stacks And Queue

Day 16

Next Greater Element on right	Next Greater
Next Greater Element 2	Next Greater 2
Daily Temperatures	Daily Temperatures
Stock Span Problem	Stock Span
maximum difference between left and right smaller	Left Right smaller
Largest Rectangular Area Histogram	Largest Area Histogram
maximu size binary matrix containing 1	maximum size binary matrix
Asteroid Collision	Asteroid Collision

Day 17

Valid Parentheses	Valid Parentheses
Length of longest valid substring	Valid Parentheses Substring
Count of duplicate Parentheses	Count of Duplicate Parentheses
Minimum Number of bracket reversal	Min Reversal
Minimum Add To make Parentheses Valid	Making Parentheses Valid
Remove K digits Problem number	Remove k digits
Longest Unbalanced Subsequence	
First negative Integer in k sized window	First negative value
Maximum sum of smallest and second smallest	max sum smallest and second smallest
K reverse in a queue	K reverse in a queue
K stacks in a single array	K stacks in a single array

Day 18

K queue	K queue in a single array
Gas Station	Gas station
Print Binary Number	Binary Number upto n
Remove duplicate letters	Remove duplicate letter
Backspace String Compare	Compare after deletion
Car fleet	Car fleet
Validate Stack	Stack Validation

Day 19

max frequency stack	max freq stack
Min Stack	min stack
ADAPTERS	
Min cost tree from leaf values	

Tree

Day 20

Inorder Traversal	Inorder traversal
Preorder Traversal	Preorder traversal
Postorder Traversal	Postorder traversal
Binary Tree Level Order	Level Order
Binary search tree to greater sum	Greater sum BST
Next right pointer in each node	Next right pointer in each node
Sum of distances in tree	sum of distances in tree

Day 21

right side view	right view
Left View	Left view
Top View	Top view
Bottom View	Bottom view
reverse level order	reverse level order
Vertical order	vertical order
Diagonal Traversal	diagonal traversal
Boundary Traversal	Boundary traversal
Binary tree coloring game	Coloring game

Day 22

image multiplication	image multiplication
inorder successor	inorder successor
Max product splitted binary tree	Max product splitted binary tree
lowest common ancestor in BST	LCA in BST

lowest common ancestor	lowest common ancestor

Day 23

Distribute coins in a binary tree	distribute coins
Binary Tree Cameras	Binary tree camera
Max path sum	
Recover binary search tree	recover binary search tree
Flatten binary tree to linked list	Flatten binary tree to linked list
Convert a binary tree to circular doubly linked list	Convert to circular DLL

Day 24

Conversion of sorted DLL to BST	DLL to BST
Merge Two BST	Merge 2 BST
clone a binary tree with random pointer	clone binary tree
Delete node in list	
Construct from inorder and preorder	from in and pre
Construct from inorder and postorder	from in and post

Day 25

Inorder and level order	Inorder and level order
isbstPreorder	preorder isBst
BST from Postorder	Bst from postorder
BST from preorder	BST from preorder
Construct from pre and post	Pre and Post
serialize and deserialize	serialize and deserialize
Fenwick tree	Fenwick tree
Longest zigzag path in binary tree	zigzag in a binary tree

Day 26

Count complete tree node	count complete tree node
closest binary search tree	closest binary search tree
Closest binary search tree value 2	closest binary search tree 2
Sum root to leaf	sum root to leaf
LCA in O(root h)	
Segment tree	

Graph

Day 27

BFS of graph	bfs-of-graph
Bipartite graph	Bipartite graph
Bus routes	
Prim's Algo	Prims algo
connecting cities with minimum cost	Connecting cities with min cost
Dijkstra algo	Dijkstra

Day 28

chef and reversing	chef and reversing
optimize water distribution in village	optimize water distribution
DFS	DFS
evaluate division	
Strongly Connected Components (Kosaraju's Algo)	
Mother Vertex	mother-vertex
Number of Enclaves	number-of-enclaves
0-1 matrix	01-matrix
Number of Islands	number-of-islands
Number of Distinct Islands	number-of-distinct-islands

Day 29

Word Ladder	word-ladder
Shortest bridge	
As far from land as possible	As far from land as possible
Sliding Puzzle	
bellman ford	Bellman ford

Day 30

Coloring A border	coloring-a-border
Rotting Oranges	rotten-oranges
topological sorting	topological sorting
Kahn's algo	Kahn's algo
course schedule 2	course schedule 2
Articulation point	articulation point
Doctor Strange	doctor-strange
Eulerian Path in an Undirected Graph	euler-circuit-in-an-undirected-graph
Euler Circuit in a Directed Graph	euler-circuit-in-a-directed-graph

Day 31

DSU	
DFS vs DSU	
Number of Islands II	number-of-islands-ii
Regions Cut By Slashes	regions-cut-by-slashes
Sentence Similarity II	sentence-similarity
Satisfiability of Equality Equations	consistent-equations
Redundant Connection	redundant-connection
Redundant connection 2	redundant-connection 2

Day 32

Castle RUN	castle-run
Minimise Malware Spread	minimize-malware-spread
Kruskal's algo	MST
Job Sequencing	Job sequencing
Reconstruct Itinerary	reconstruct-journey
Sort item by group accord to dependencies	dependency sort

Day 33

Most Stones Removed with Same Row or Column	most-stones-removed-with-same-row-or-column
Find the Maximum Flow	Ford fulkerson and Edmond's karp
Maximum Bipartite Matching	maximum-bipartite-matching
Min swaps required to sort array	Min swaps

Day 34

min swaps to make 2 array identical	
Bricks Falling when hit	
Alien Dictionary	
Largest color value in a directed graph	largest color value
Swim in rising water	
Shortest distance from all buildings	
remove max number of edges to keep graph traversal	

Day 35

graph connectivity with threshold	
Smallest string with swaps	
cheapest flight within k stops	cheapest flight within k stops
cracking the safe	Cracking the safe
Find eventual safe state	
Shortest cycle in an undirected graph	
Floyd Warshall	floyd-warshall
Johnson's algorithm	

HashMap and Heap

Day 36

number of subarrays sum exactly k	number of subarrays with sum exactly k
Subarray sum Divisible by k	Sum divisible by k
Same differences	
subarray with equal number of 0 and 1	subarray with equal zero and one
Substring with equal 0 1 and 2	substring with equal 0 1 2
K closest point from origin	K closest point from origin
Longest consecutive 1's	longest consecutive 1's

Day 37

Minimum number of refueling spots	minimum number of refueling spot
Potions(hard version)	
X of akind in a deck	X of a kind in a deck
Check AP sequence	Check AP sequence

Day 38

Array of doubled Pair	Array of doubled Pair
Rabbits in forest	Rabbits in a forest
Longest consecutive sequence	Longest consecutive sequence
The skyline problem	The skyline problem
Morning Assembly	morning assembly
Brick wall	

Day 39

Grid Illumination	Grid Illumination
Island perimeter	Island perimeter
bulb switcher	bulb switcher
isomorphic string	isomorphic string
Pairs of coinciding points	Coinciding points

Day 40

trapping rain water	trapping rain water
Trapping Rain Water II	trapping rain water 2
Count Pair whose sum is divisible by k	Pair sum divisibility
length of largest subarray with continuous element	length of largest subarray with cont element
length of largest subarray with cont element 2	length of largest subarray with cont element 2
smallest number whose digit mult to given no.	Smallest no. digit multiply to given number
same frequency after one removal	Same after one removal
Insert Delete GetRandom O(1)	Insert delete GetRand O(1)

Day 41

insert delete get random duplicates allowed	Insert delete GetRand O(1) with duplicates
Find all anagrams in a string	Find all anagram
Anagram Palindrome	Anagram palindrome
Find smallest size of string containing all char of other	Smallest window string
Group anagram	Group anagram
longest substring with unique character	longest substring with unique character
smallest subarray with all the occurence of MFE	Smallest subarray with all MFE
Find Anagram Mapping	Find anagram mapping
K anagram	K anagram

Day 42

rearrange character string such that no two are same	rearrange such that no two are same
Mode of frequencies	Mode of frequencies
Line reflection	Line reflection
Kth smallest element in sorted 2d matrix	Kth smallest in 2d matrix
Kth smallest prime fraction	Kth smallest prime
Employee Free time	Employee free time

Greedy

Day 43

Activity Selection Problem	
Job SequencingProblem	
Huffman Coding	
Water Connection Problem	
Fractional Knapsack Problem	
Greedy Algorithm to find Minimum number of Coins	
Maximum trains for which stoppage can be provided	
Minimum Platforms Problem	

Day 44

Buy Maximum Stocks if i stocks can be bought on i-th day	
Find the minimum and maximum amount to buy all N candies	
Minimize Cash Flow among a given set of friends who have borrowed money from each other	
Minimum Cost to cut a board into squares	
Check if it is possible to survive on Island	
Find maximum meetings in one room	
Maximum product subset of an array	
Maximize array sum after K negations	

Day 45

Maximise the sum of arr[i]*i	
Maximum sum of absolute difference of an array	
Maximize sum of consecutive differences in a circular array	
Minimum sum of absolute difference of pairs of two arrays	
Program for Shortest Job First (or SJF) CPU Scheduling	
Program for Least Recently Used (LRU) Page Replacement algorithm	
Smallest subset with sum greater than all other elements	
Chocolate Distribution Problem	

Day 46

DEFKIN -Defense of a Kingdom	
DIEHARD -DIE HARD	
GERGOVIA -Wine trading in Gergovia	
Picking Up Chicks	
CHOCOLA --Chocolate	
ARRANGE -Arranging Amplifiers	

Day 47

K Centers Problem	
Minimum Cost of ropes	
Find smallest number with given number of digits and sum of digits	
Rearrange characters in a string such that no two adjacent are same	
Find maximum sum possible equal sum of three stacks	

Backtracking

Day 48

Rat in a maze Problem	
Printing all solutions in N-Queen Problem	
Word Break Problem using Backtracking	

Remove Invalid Parentheses
Sudoku Solver

Day 49

m Coloring Problem
Print all palindromic partitions of a string
Subset Sum Problem
The Knight's tour problem

Day 50

Tug of War
Find shortest safe route in a path with landmines
Combinational Sum
Find Maximum number possible by doing at-most K swaps
Print all permutations of a string

Day 51

Find if there is a path of more than k length from a source
Longest Possible Route in a Matrix with Hurdles
Print all possible paths from top left to bottom right of a mXn matrix
Partition of a set intoK subsets with equal sum
Find the K-th Permutation Sequence of first N natural numbers

Dynamic Programming	
	Day 52
longest increasing subsequence	LIS(n^2)
longest increasing subsequence	LIS(nLogn)
building bridges	Building bridges
Russian doll envelopes	Envelope stacking
Box stacking	Stacking
weighted job scheduling	weighted job scheduling
minimum number of increasing subsequence	min number of inc subseq
	Day 53
Paint fence	Paint fence
Paint house	Paint house
Paint house 2	Paint house 2
No. of binary string without consecutive 1	Without cons 1
Possible ways to construct the building	
Catalan number	
Total no. of bst	Total bst
Applications of Catalan numbers	
Min cost path	min cost path
Cherry pickup	Cherry pickup
	Day 54
Cherry pickup 2	
best time to buy and sell stock	best time to buy and sell
best time to buy and sell 2	best time to buy and sell 2
buy and sell with transaction fee	transaction fee
best time to buy and sell with cool down	cooldown
best time to buy and sell 3	best time to buy and sell 3
best time to buy and sell 4	best time to buy and sell 4
Highway billboard problem	billboard
	Day 55
burst balloons	Burst balloons
Matrix chain multiplication	MCM
boolean parenthesization	boolean parenthesization
Min and max val of expression	Min and max
Minimum score triangulation	Min score triangulation
Binomial coefficient	binomial coefficient
	Day 56
Longest common subsequence	LCS
LCS triplet	LCS triplet
Longest palindromic subsequence	LPS
Count of palindromic subsequence	
Count distinct palindromic subsequence	
Palindromic substrings	
No. of sequence of type a^ib^jc^k	seq of given type
COunt of distinct subsequences	
	Day 57
Edit distance	Edit distance
2 egg 100 floor	
egg drop	
Optimal strategy for a game	
Ugly number	
Super ugly number	Super ugly number
max size subsquare with all 1	
Wildcard pattern matching	Wildcard
	Day 58
Regular Expression Matching	
Palindrome partitioning	
Longest Bitonic subsequence	
Knights probability in chessboard	
Word break problem	
Longest repeating subsequence	
	Day 59
Optimal BST	
Max sum subarray witrh atleast k elements	
Say no to palindrome	
Number of digit 1	
Scramble string	Scramble string
Distinct subsequences	
Shortest common superseq	
	Day 60
longest common substring	
frog jump	
Jump game 2	
Friends pairing problem	Friends pairing problem
Dungeon game	

String Algorithm	
	Day 61
KMP	KMP
Rabin Karp	Rabin Karp
Shortest Palindrome	shortest palindrome
Z algo	Z algo
chef and secret password	Chef and secret password
Manacher's algo	Manacher's algo
	Day 62
Tri tiling	tri tiling
Scramble string	Scramble string
Coin change	
Coin change 2	
Unbounded knapsack	Unbounded knap

Bit Manipulation	
	Day 63
Count set bits in an integer	
Reverse Bits	
Find the two non-repeating elements in an array of repeating elements	
Count number of bits to be flipped to convert A to B	
Program to find whether a no is power of two	
Copy set bits in a range	
Calculate square of a number without using *, / and pow()	
	Day 64
Subsequence of string (using Bit Manipulation)	
Single Number II	
Hamming Distance(imp.)	
Bitwise ORs of subarrays	
Divide Integers	
Minimum Xor Value	
Max Xor in a range [L, R]	

Tries	
	Day 65
Implement Trie prefix tree	Implement Trie
maximum XOR of two numbers in an array	Maximum XOR
Search Suggestions System	Search suggestions system
Kth smallest in lexicographical order	Kth smallest in lexicographical
No prefix set	No prefix set
Shortest Unique prefix	Shortest unique prefix

DSA INTERVIEW READY