TRAINING CURRICULUM

Topic Name	Programs	Assignments	No of Hours
Arrays	**Subarray with given sum** **Count the triplets** **Kadane's Algorithm** **Missing number in array** **Pythagorean Triplet** **Chocolate Distribution Problem** **Spirally traversing a matrix** **Largest Number formed from an Array**	Rearrange array alternatively Number of pairs Merge two sorted arrays K'th smallest element Inversion of Array Reverse array in groups	**3**
Strings	**Permutations of a given string** **Longest Palindrome in a String** **Recursively remove all adjacent duplicates** **Check if string is rotated by two places** **Longest Distinct Characters in the string** **Longest Common Prefix**	Anagram Reverse words in a given string Remove Duplicates Roman Number to Integer	**3**
Recursion	**Flood fill Algorithm** **Combination Sum** **Special Keyboard** **Josephus problem**	Number of paths Factorial of a Number Using Recursion Prime Numbers Using Recursion	**3**
LinkedList	**Finding middle element in a linked list** **Rotate a Linked List** **Reverse a Linked List in groups of given size** **Intersection point in Y shaped linked lists** **Detect Loop in linked list** **n'th node from end of linked list** **Flattening a Linked List** **Intersection point of two Linked Lists** **Implement Queue using Linked List** **Implement Stack using Linked List** **Given a linked list of 0s, 1s and 2s, sort it**	Reverse a linked list Remove loop in Linked List Merge two sorted linked lists Add two numbers represented by linked lists Check if Linked List is Palindrome	**3**

Stacks &Queues	**Parenthesis Checker** **LRU Cache** **Circular tour** **First non-repeating character in a stream** **Rotten Oranges** **Maximum of all subarrays of size k**	Queue using two Stacks Stack using two queues Next larger element Get minimum element from stack	3
Tree	**Print Left View of Binary Tree** **Check for BST** **Print a Binary Tree in Vertical Order** **Connect Nodes at Same Level** **Lowest Common Ancestor in a BST** **Write Code to Determine if Two Trees are Identical or Not** **Given a binary tree, check whether it is a mirror of itself** **Height of Binary Tree** **Maximum Path Sum** **Check if given Binary Tree is Height Balanced or Not** **Serialize and Deserialize a Binary Tree**	Print Bottom View of Binary Tree Level order traversal in spiral form Convert a given Binary Tree to Doubly Linked List Diameter of a Binary Tree Number of leaf nodes	6
Graph	**Depth First Traversal** **Detect cycle in undirected graph** **Topological sort** **Find the number of islands** **Implementing Dijkstra** **Strongly Connected Components** **Find whether path exist** **Minimum Cost Path** **Circle of Strings** **Snake and Ladder Problem**	Breadth First Traversal Detect cycle in a directed graph Minimum Swaps Shortest Source to Destination Path	6
Greedy Algorithms	**Activity Selection** **N meetings in one room** **Coin Piles** **Maximize Toys** **Page Faults in LRU** **Huffman Decoding** **Minimum Spanning Tree** **Shop in Candy Store** **Geek collects the balls**	Largest number possible Minimize the heights Minimize the sum of product	6

Dynamic Programming	**Minimum number of Coins** **Longest Common Substring** **Longest Increasing Subsequence** **Longest Common Subsequence** **0 – 1 Knapsack Problem** **Edit Distance** **Coin Change Problem** **Subset Sum Problem** **Egg Dropping Puzzle** **Optimal Strategy for a Game** **Shortest Common Super sequence**	Minimum Operations Max length chain Maximum sum increasing subsequence Minimum number of jumps	6
Divide & Conquer	**Find the element that appears once in sorted array** **Search in a Rotated Array** **Sum of Middle Elements of two sorted arrays** **Quick Sort** **Merge Sort** **K-th element of two sorted Arrays**	Binary Search Linear Search Bubble Sort Selection Sort	6
Backtracking	**N-Queen Problem** **Solve the Sudoku**	Word Boggle Generate IP Addresses	6
Heap	**Find median in a stream** **Heap Sort** **Kth largest element in a stream** **Merge K sorted linked lists** **Kth largest element in a stream**	Operations on Binary Min Heap Rearrange characters	6
Core Java	**OOP(complex MCQ's)**	OOPS Concepts Objects Methods/Functions Function Calling Using Objects Constructor Inheritance & It's Types Keywords (Super, Final & Finally) Polymorphism & It's Types Abbstract Class V/S Interface	2
Advanced Core Java	**Collections & Generics**	List Queue Set	4

DBMS	SQL	RDBMS Fundamentals , Introdution to RDBMS, Tables, Fields and Records, Normal Forms & introduction to Oracle, Normal Forms:UNF, 1NF, 2NF, 3NF, EKNF, BCNF, 4NF. Introduction to Oracle	2
DBMS	SQL	Join & Sub Queries, Complex SQL Queries	7