Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

Academic year 2022-23

Questions from Tree, graph, Searching, sorting, Hashing

Direct Second Year-All Branches

Subject: Data structures and algorithms

Subject Incharge: Deepali Patil **Date: 24/12/2022**

Sr. No	Questions
1.	Compare Tree and graph
2	Explain Binary search, Linear search, Fibonacci search algorithm with examples. Also comment on calculation of its time complexity.
3	Describe an Expression tree with an example. Generate an expression tree for any expression given
4	Compare BFS and DFS traversal techniques.
5	What is a graph? Explain methods to represent graph
6	What is hashing? Using Linear probing and quadratic probing insert the following values in the hash table of any size.. Show how many collisions occurred in each iteration.: any set of integer values
7	Explain different types of tree traversal techniques with examples. Also write a recursive function for each traversal technique.
8	Insert the following elements in the AVL tree: set of integer values. Explain different types of rotations that can be used.
9	Write an algorithm for Merge Sort, insertion sort, selection sort with example.
10	Explain different cases for insertion/deletion/search of a node in binary search tree. Write an algorithm/function for the same..
11	What are the different tree terminologies (depth.height, degree etc)
12	Write properties of Heap. Also build Max heap for the following array (any type of example can come)
13	What is a collision? What are the methods to resolve collisions? Explain any one with

	example
14	What is a binary search tree? Construct Binary search tree for the following elements-set of integer values.
15	Explain different types of graph traversal techniques with examples.
16	Define Hashing. Explain various hash functions used in data structure.
17	Explain Extendible hashing with an example.
18	Compare static hashing and dynamic hashing.
19	Explain Rehashing with an example.
20.	Compare Merge sort and quicksort.