



Question Paper Code:

CS302PC

ACE-R20

Semester Supplementary Examination
II B. Tech- I Semester- SEPTEMBER-2022
DATA STRUCTURES
(Common to CSE,IT,CSM,CSD,CSO)

Time: 3 Hours

Max. Marks: 70

H. T. No

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks
1.	List various operations of linked list and explain how to insert a node in the single linked list.	14
2.	The Keys 22, 38, 13, 42, 3, 23, 5 and 35 are inserted into an initially empty hash table of length 10 using open addressing with hash function $h(k) = k \text{ mod } 10$. Solve collisions with linear and quadratic probing.	14
3. a)	Explain different hash functions with examples.	5
b)	Construct a binary search tree by inserting in the following sequence of integers: 30, 25, 6, 51, 20, 18, 69, 3, 38, 37, 60 and 24	9
4. a)	Evaluate the postfix expression 8, 3, 2, +, -, 3, 8, 2, /, +, *, 2, *, 3, +	10
b)	Differentiate between complete binary tree and full binary tree.	4
5. a)	Insert the following sequence of elements into an AVL tree, starting with an empty tree: 10, 20, 15, 25, 30, 16, 18, 19.	10
5. b)	Write short notes on splay trees.	4
6.	Find DFS Traversal of the given graph with starting vertex 'A'	14
7. a)	What is graph? write various graph representation methods	8
b)	Sort the given sequence using Merge sort algorithm 3, 7, 8, 10, 13, 15, 16, 82.	6
8.	Explain KMP Algorithm with example	14