

15 mark QUESTIONS

S.No.	TOPIC – SORTING
1.	Demonstrate Sorting of a Disk File using any Sorting Technique

S.No.	TOPIC – SEARCHING
2.	Demonstrate Searching on a Disk File using any Searching Technique

S.No.	TOPIC – STACKS
3.	Perform the evaluation of a Postfix expression using the stack. Example: $123*+4-$ evaluates to 3
4.	Check if the parenthesis of an expression are balanced using the stack. Example: $(3 + (4 - x)^* 7 + (y - 2 * (2 + x))$
5.	Demonstrate the working of DFS

S.No.	TOPIC – QUEUES
6.	Implement Priority Queues as a linked list
7.	Demonstrate the working of BFS

S.No.	TOPIC – LINKED LISTS
8.	For 2 singly linked lists show the following operations: Insert, Display and Merge the lists
9.	For 2 singly linked lists show the following operations: Insert, Display and Append the lists
10.	For 2 singly linked lists show the following operations: Insert, Display and find the Union of the lists
11.	For 2 singly linked lists show the following operations: Insert, Display and find the Intersection of the lists
12.	For 2 doubly linked lists show the following operations: Insert, Display and Merge the lists
13.	For 2 doubly linked lists show the following operations: Insert, Display and Append the lists
14.	For 2 doubly linked lists show the following operations: Insert, Display and find the Union of the lists
15.	For 2 doubly linked lists show the following operations: Insert, Display and find the Intersection of the lists

S.No.	TOPIC – BINARY SEARCH TREES
16.	For a binary search tree show the following operations: Insert, Display (i.e. traverse in inorder/preorder or postorder) and Search for a node
17.	For a binary search tree show the following operations: Insert, Display (i.e. traverse in inorder/preorder or postorder) and Delete a node
18.	For a binary search tree show the following operations: Insert, Display (i.e. traverse in inorder/preorder or postorder) and find the largest node

19.	For a binary search tree show the following operations: Insert, Display (i.e. traverse in inorder/preorder or postorder) and find the smallest node
20.	For a binary search tree show the following operations: Insert, Display (i.e. traverse in inorder/preorder or postorder) and count the number of nodes

S.No.	TOPIC – HEAPS
21.	Represent a Min Heap with all the required operations
22.	Represent a Max Heap with all the required operations
23.	Perform Heap Sort on a given array
24.	Perform the Select-K operation on a Heap where K is the input given by the user

S.No.	TOPIC – HASHING (Values are given as an example, change as required)
25.	Use digit extraction method (1 st , 3 rd and 5 th) for hashing the following values 224562, 140145, 144467, 137456, 214576, 199645, 214562, 162145, 234534 in an array of 19 elements. Use linear probe method to resolve any collisions.
26.	Use Fold Shift method for hashing the following values 224562, 140145, 144467, 137456, 214576, 199645, 214562, 162145, 234534 in an array of 19 elements. Use linear probe method to resolve any collisions.
27.	Use Fold Boundary method for hashing the following values 224562, 140145, 144467, 137456, 214576, 199645, 214562, 162145, 234534 in an array of 19 elements. Use linear probe method to resolve any

	collisions.
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S.No.	TOPIC – GRAPHS
28.	Implement Warshall's algorithm to find the Shortest Path
29.	Find the Minimum Spanning Tree for a given graph

