Duration: 3 Hours   Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, insert, inorder. Write a menu driven program that performs the above operations.   **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and stores it as an adjacency matrix. Display the adjacency matrix. Implement functions to print indegree of all vertices of graph. **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, search, preorder. Write a menu driven program that performs the above operations.   **[10]**

Q.2) Write a C program which uses Binary search tree library and implements following function:
int sumodd(T) – returnssum of all odd numbers from BST   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, insert, postorder. Write a menu driven program that performs the above operations.   **[10]**

Q.2) Write a program to sort n randomly generated elements using Heapsort method.
                                                                              [10]

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   Viva   **[5]**

Duration: 3 Hours	Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, search, preorder. Write a menu driven program that performs the above operations. **[10]**

Q.2) Write a C program which uses Binary search tree library and implements following function:
int sumeven(T) – returns sum of all even numbers from BST **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form) **[10]**

Q.4) **Viva** **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, insert, postorder. Write a menu driven program that performs the above operations.   **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement function to traverse the graph using Breadth First Search (BFS) traversal.   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours	Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, preorder and postorder. Write a menu driven program that performs the above operations. **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph. Create adjacency list and display the adjacency list. **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form) **[10]**

Q.4) Viva **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Implement a Binary search tree (BST) library (btree.h) with operations – create, preorder .Write a menu driven program that performs the above operations.   **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement function to traverse the graph using Depth First Search (DFS) traversal.   **[10]**

Q.3)   Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program which uses Binary search tree library and displays nodes at each level, count of node at each level and total levels in the tree. **[10]**

Q.2) Write a C program which uses Binary search tree library and implements following function: mirror(T) – converts given tree into its mirror image. **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program which uses Binary search tree library and displays nodes at each level, count of node at each level and total levels in the tree.   **[10]**

Q.2) Write a C program which uses Binary search tree library and implements following function with recursion:
T copy(T) – create another BST which is exact copy of BST which is passed as parameter.   **[10]**

Q.3)   Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

S.Y.B.Sc Computer Science Practical Examination June 2020-21
Lab Course - CS 243: Practical course on CS 241 and CS 242
Data Structures and Algorithms II

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program which uses Binary search tree library and displays nodes at each level, count of node at each level and total levels in the tree.   **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement functions to print indegree of all vertices of graph.   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   Viva   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement function to traverse the graph using Breadth First Search (BFS) traversal.   **[10]**

Q.2) Implement a Binary search tree (BST) library (btree.h) with operations – create, inorder. Write a menu driven program that performs the above operations.   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   Viva   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement function to traverse the graph using Depth First Search (DFS) traversal.   **[10]**

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Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4) **Viva**   **[5]**

Duration: 3 Hours	Maximum Marks: 35

Q.1) Write a C program which uses Binary search tree library and implements following function with recursion:
int compare(T1, T2) – compares two binary search trees and returns 1 if they are equal and 0 otherwise. **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and stores it as an adjacency matrix. Display the adjacency matrix. **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form) **[10]**

Q.4) **Viva** **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program that accepts the vertices and edges of a graph. Create adjacency list and display the adjacency list.   **[10]**

Q.2)   Write a program which uses binary search tree library and counts the total nodes in the tree. int count(T) – returns the total number of nodes from BST   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a program to sort n randomly generated elements using Heapsort method.   **[10]**

Q.2)   Write a program which uses binary search tree library and counts the total nodes in the tree.
int count(T) – returns the total number of nodes from BST   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4)   **Viva**   **[5]**

Duration: 3 Hours   Maximum Marks: 35

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Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4) Viva   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a program which uses binary search tree library and counts the total leaf nodes in the tree. int countLeaf(T) – returns the total number of leaf nodes from BST   **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and stores it as an adjacency matrix. Display the adjacency matrix.   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

Q.4) Viva   **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a program which uses binary search tree library and counts the total leaf nodes in the tree. int countLeaf(T) – returns the total number of leaf nodes from BST **[10]**

Q.2) Write a C program that accepts the vertices and edges of a graph and store it as an adjacency matrix. Implement functions to print indegree of all vertices of graph. **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form) **[10]**

Q.4) **Viva** **[5]**

Duration: 3 Hours   Maximum Marks: 35

Q.1) Write a C program that accepts the vertices and edges of a graph. Create adjacency list and display the adjacency list. **[10]**

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   int sumeven(T) – returns sum of all even numbers from BST   **[10]**

Q.3) Multiple Choice Questions: (Using Microsoft Form)   **[10]**

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