S.Y.B.Sc Computer Science Practical Examination
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) Implement a Binary search tree (BST) library (btree.h) with operations – create, insert, inorder. Write a menu driven program that performs the above operations. **[15]**

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. **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
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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. **[15]**

Q.2) Implementation of Dijkstra's shortest path algorithm for finding Shortest Path from a given source vertex using adjacency cost matrix **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
Lab Course - CS 243: Practical course on CS 241 and CS 242
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Q1) Implementation of static hash table with Linear Probing. **[15]**

Q.2) C program to implement graph traversal method using depth first search **[15]**

Q 3) **Viva** **[5]**

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Q.2) Write C Program that accept the vertices and edges of a graph and store it is an adjacency Matrix **[15]**

Q.3) Viva **[5]**

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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. **[15]**

Q.3) Viva **[5]**

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Q.3) Viva **[5]**

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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. **[15]**

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. **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
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Q.1) C program to implement graph as adjacency matrix. **[15]**

Q.2) Implementation of static hash table with Linear Probing. **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
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Q.1) C program to implement graph traversal method using depth first search. **[15]**

Q.2) C program to implement BST to perform following operations on BST-
a) Create b) Counting leaf nodes. **[15]**

Q.3) Viva **[5]**

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Q.3) Viva **[5]**

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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. **[15]**

Q.3) Viva **[5]**

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Q.3) Viva **[5]**

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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. **[15]**

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. **[15]**

Q.3) Viva **[5]**

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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. **[15]**

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 **[15]**

Q.3) Viva **[5]**

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Q.1) Implementation of static hash table with Linear Probing. **[15]**

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 **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
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Duration: 3 Hours Maximum Marks: 35

Q.1) C program to implement graph traversal method using Breadth first search **[15]**

Q.2) Implement a Binary search tree (BST) library (btree.h) with operations – create, preorder. Write a menu driven program that performs the above operations. **[15]**

Q.3) Viva **[5]**

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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]**

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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 **[15]**

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. **[15]**

Q.3) Viva **[5]**

S.Y.B.Sc Computer Science Practical Examination
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Data Structures and Algorithms II

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Q.1) Write a C program that accepts the vertices and edges of a graph. Create adjacency list and display the adjacency list. **[15]**

Q.2) Implement a Binary search tree (BST) library (btree.h) with operations – create, preorder. Write a menu driven program that performs the above operations. **[15]**

Q.3) Viva **[5]**

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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. **[15]**

Q.2) Implementation of static hash table with Linear Probing method. **[15]**

Q.3) Viva **[5]**

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Q.1) C program to implement graph as adjacency List. **[15]**

Q.2) C program to implement BST to perform following operations on BST-
a) Create b) Counting Total nodes **[15]**

Q 3. **Viva** **[5]**

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