

Savitribai Phule Pune University

S.Y.BCS (Computer Science) Practical Examination (2019 Pattern)

Lab Course 234 SEM IV

Data Structure Laboratory

Duration: 3 Hours

Maximum Marks: 35

Q 1. 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 Marks]

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

OR

Q 2. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm. [15 Marks]

Q 3) Viva [5 Marks]

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S.Y.BCS (Computer Science) Practical Examination (2019 Pattern)

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Q1. Write a C program for the implementation of Topological sorting. [15 Marks]

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 Marks]

OR

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 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm.

[15 Marks]

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 Marks]

OR

Q 2. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix.

[15 Marks]

Q 3. Viva

[5 Marks]

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

Q 2. Write a program which uses binary search tree library and counts the total nodes and total leaf nodes in the tree.
int countLeaf(T) – returns the total number of leaf nodes from BST. [15 Marks]

OR

Q 2. Write a C program for the implementation of Topological sorting. [15 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program which uses Binary search tree library and displays nodes at each level, count of node at each level. [15 Marks]

Q 2. Write a program to sort n randomly generated elements using Heapsort method. [15 Marks]

OR

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 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm.

[15 Marks]

Q 2. Write a C program for the implementation of Dijkstra's shortest path algorithm for finding shortest path from a given source vertex using adjacency cost matrix.

[15 Marks]

OR

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.

Q 3. Viva

[5 Marks]

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Q 1. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix. [15 Marks]

Q2. Write a program to sort n randomly generated elements using Heap sort method. [15 Marks]

OR

Q 2. Write a C program which uses Binary search tree library and displays nodes at each level, and total levels in the tree. [15 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a program to sort n randomly generated elements using Heapsort method. [15 Marks]

Q 2. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm.
[15 Marks]

OR

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 Marks]

Q 3. Viva [5 Marks]

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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 Marks]

Q 2. 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 Marks]

OR

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 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix. [15 Marks]

Q 2. Write a C program that accepts the vertices and edges of a graph. Create adjacency list and display the adjacency list. [15 Marks]

OR

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 Marks]

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Q 1. Implement a Binary search tree (BST) library (btree.h) with operations – create, insert, preorder. Write a menu driven program that performs the above operations. [15 Marks]

Q 2. Write a C program for the implementation of Topological sorting. [15 Marks]

OR

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, outdegree and total degree of all vertices of graph. [15 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program for the Implementation of Kruskal's Minimum spanning tree algorithm.

[15 Marks]

Q 2. Write a program which uses binary search tree library and counts the total nodes and total leaf nodes in the tree.

int countLeaf(T) – returns the total number of leaf nodes from BST

[15 Marks]

OR

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

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Q 3. Viva

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Q 1. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix. [15 Marks]

Q2. Write a menu driven program to implement hash table using array (insert, search, display). Use any of the above-mentioned hash functions. In case of collision apply linear probing. [15 Marks]

OR

Q 2. Write a C program which uses Binary search tree library and displays nodes at each level, and total levels in the tree. [15 Marks]

Q 3. Viva [5 Marks]

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Q 1. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm.

[15 Marks]

Q 2. Write a C program for the implementation of Dijkstra's shortest path algorithm for finding shortest path from a given source vertex using adjacency cost matrix.

[15 Marks]

OR

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

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Q 1. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix. [15 Marks]

Q2. Write a program to sort n randomly generated elements using Heapsort method. [15 Marks]

OR

Q 2. Write a C program which uses Binary search tree library and displays nodes at each level, and total levels in the tree. [15 Marks]

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Q1. Write a menu driven program to implement hash table using array (insert, delete, display).
Use any of the above-mentioned hash functions. In case of collision apply linear probing.
[15 Marks]

Q2. Write a program to sort n randomly generated elements using Heapsort method. [15 Marks]

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Q 1. 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 Marks]

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

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Q 2. Write a C program for the Implementation of Prim's Minimum spanning tree algorithm. [15 Marks]

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int count Leaf(T) – returns the total number of leaf nodes from BST [15 Marks]

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Q 2. Write a C program for the implementation of Floyd Warshall's algorithm for finding all pairs shortest path using adjacency cost matrix.

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Q 1. Write a program to sort n randomly generated elements using Heap sort method. [15 Marks]

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