Savitribai Phule Pune University

S.Y. B.Sc. (Cyber and Digital Science)

Semester – III

C.B.C.S 2020 Pattern

CDS-236- Lab on CDS-233

(Data Structure Using Python Laboratory)

Savitribai Phule Pune University

S. Y. B.Sc. (Cyber and Digital Science) Semester III Practical Examination

CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to sort an array of integers using Bubble Sort. [10]

Q.2) Write a Python program for dynamic implementation Stack. [20]

OR

Q.2) Write a Python program to accept the vertices and edges for a graph and store it as adjacency list and display it. [20]

Q.3) Viva [05]

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S. Y. B.Sc. (Cyber and Digital Science) Semester III Practical Examination

CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to sort n elements using Selection Sort. [10]

Q.2) Write a menu driven program in Python for the following : [20]

- To create doubly linked list.
- To delete last node from doubly linked list.
- Insert a node by a position in doubly linked list
- Display.

OR

Q.2) Write a Python program to accept an infix expression and convert it into postfix form. [20]

Q.3) Viva [05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

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Q.1) Write a Python program to sort n numbers using Insertion Sort technique.

[10]

Q.2) Write a Python program to perform following operation on singly linked list.

- Create the list.
- Insert an element by position in the list.
- Delete first element from singly linked list.
- Display the list.

[20]

OR

Q.2) Write a Python program for the dynamic implementation of Queue.

[20]

Q.3) Viva

[05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q1. Write a Python program to search an element in an array using linear search method.

[10]

Q2. Write a Python program to perform following operations on Stack:

[20]

- Push()
- Pop()
- IsEmpty()
- IsFull()

OR

Q2. Write a menu driven program in python to perform the following operations on Circular singly linked list: [20]

- Create
- Insert a Node by position in the list.
- Delete a node by position form the list.
- Display the List.

Q3. Viva [05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

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Q.1) Write a Python program for the implementation of Priority Queue. [10]

Q.2) Write a Python program to create and display doubly linked list in reverse order. [20]

OR

Q.2) Write a Python program to evaluate postfix expression using stack. [20]

Q.3) Viva [05]

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Q1. Write a Python program to search an element using binary search method.

[10]

Q2. Write a Python program to reverse a Singly Linked List.

[20]

OR

Q2 Write a Python program to create binary search tree (BST) of integer numbers and display it's in- order traversal, pre-order traversal and post-order traversal.

[20]

Q 3. Viva

[05]

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Q.1) Write a Python program to sort n numbers using Quick Sort technique. [10]

Q.2 Write a Python program for the static implementation linear queue. [20]

OR

Q.2) Write a Python program for the implementation of circular queue. [20]

Q.3) Viva [05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q. 1) Write a Python program to search an element in an integer array using: Linear Search Method. [10]

Q.2) Write a Python program to evaluate postfix expression using stack. [20]

OR

Q.2) Write a Python menu driven program to implement doubly linked list of integers with following operations: [20]

- Create
- Insert a Node at the end of list.
- Delete specific element
- Display

.

Q.3) Viva [05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to reverse a given string using stack.

[10]

Q.2) Write a program using Python for implementation of singly linked list. Menu should have the following options –

[20]

- Create.
- Display.
- Search specific element in list and display appropriate Message.
- Delete specific element

OR

Q.2) Write a menu driven Python program for dynamic implementation of Queue.

[20]

- -Insert
- -Delete
- -Display

.

Q.3) Viva [05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

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Q.1) Write a Python program to search an element in an integer array using: Binary Search Method.

[10]

Q.2) Write a menu driven program using Python for implementation of doubly linked list. Menu should have the following options –

- Create.
- Display in reverse order.
- Delete a node at given position.

[20]

OR

Q.2) Write a python program for the implementation of circular queue. [20]

Q.3) Viva

[05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to sort n elements using Selection Sort. [10]

Q.2) Write a Python program for the dynamic implementation stack with following operations: [20]

- Push()
- Pop()
- IsEmpty()

OR

Q.2) Write a python program to create Binary Search Tree for integers and display its in-order and post order traversal. [20]

Q.3) Viva [05]

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Q.1) Write a Python program to search an element using Linear Search method. [10]

Q.2) Write a Python program for Dynamic implementation of Queue with operations:

- Insert()
- Delete()
- Display()

[20]

OR

Q.2) Write a Python program to sort an integer array using Quick Sort.
. [20]

Q.3) Viva [05]

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Q.1) Write a Python program to sort n elements using Merge Sort.

[10]

Q.2) Write a Python program to implement Linear Queue with operations:

- Insert()
- Delete()
- Empty()

[20]

OR

Q.2) Write a menu driven program using Python for implementation of singly linked list. Menu should have the following options –

[20]

1. Create.
2. Display.
3. Search specific element in list and display appropriate Message.
4. Delete specific element

Q.3) Viva [05]

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Q.1) Write a Python program to sort an element in an integer array using Bubble Sort [10]

Q.2) Write a Python program to check whether given string is palindrome or not using stack.

[20]

OR

Q.2 Write a Python program for dynamic implementation of stack for integer with

Operations:

[20]

- Push()
- Pop()
- IsEmpty()

Q.3) Viva

[05]

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CDS-236- Lab on CDS-233 (Data Structure Using Python)

Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to sort n numbers using insertion sort.

[10]

Q.2) Write a Python program to implement Dynamic Implementation of Queue with following operations:

- Insert
- Delete
- Empty

[20]

OR

Q.2 Write a python program to create Binary Search Tree for integers and display it's pre-order and post order traversal.

[20]

Q.3) Viva

[05]

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Duration: 3Hrs. **Max Marks: 35**

Q.1) Write a Python program to sort an integer array using a Selection Sort.

[10]

Q.2) Write a Python program to reverse a singly linked list:

[20]

OR

Q.2) Write a Python program to convert infix expression into Postfix.

[20]

Q.3) Viva

[05]

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Q.1) Write a Python program to accept polynomial and display it.

[10]

Q.2) Write a Python program to convert infix expression to prefix expression.

[20]

OR

Q. 2) Write a Python program to accept a graph for n vertices and display it by using adjacency matrix.

[20]

Q.3) Viva

[05]

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Q.1) Write a Python program to sort an element in an integer array using: Selection Sort [10]

Q.2) Write a Python program to sort singly linked list. [20]

OR

Q. 2 Write a menu driven program in Python for the following operations on circular singly linked list.

[20]

1. Create.
2. Display.
3. Delete specific element

.

Q.3) Viva

[05]

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Q1. Write a Python program to sort the elements in an integer array using:

insertion Sort.

[10]

Q.2 Write a Python program to accept string from user and store its character one by one into the nodes of singly linked list and display that list.

[20]

OR

Q.2) Write a Python program for the evaluation of given postfix expression.

[20]

Q.3 Viva [05]

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Q 1. Write a Python program to sort the data by using insertion sort technique.

[10]

Q 2. Write a Python program to create doubly linked list for n integers, calculate their sum and display it.

[20]

OR

Q 2. Write a Python program to create a singly linked list and display its alternate nodes.

[20]

Q 3. Viva [05]