DIPLOMA IN COMPUTER ENGINEERING AND INTERNET OF THINGS

CENTRALIZED QUESTION BANK

1058234340- DATA STRUCTURES USING C

DIRECTORATE OF TECHNICAL

EDUCATION GOVERNMENT OF

TAMILNADU

DIPLOMA END SEMESTER / YEAR EXAMINATION – 2025

Course: Computer Engineering and Internet of Things

Subject : Data Structures Using C   **QP Code :** 1058234340

Time :3 Hours   **Date :**   **Session:**   **Max Marks:** 100

Answer the Following Questions

1.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.

    B) Write a C program to en queue elements to the queue, de queue elements from the queue and display the elements of the queue.

2.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.

    B) Write a C program to create a Tree and insert elements in to the tree.

3.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.

    B) Write a C program to perform in-order, pre order, and post-or dertraversals in a Binary Tree.

4.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.

    B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

5.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.
    B) Write a C program to implement Insertion Sort.

6.   A) a. Write a C program to take year as input and checks whether it's a leap year or not.
          b.   Write a C program to find the given number is palindrome or not.

    B) Write a C program to implement Linear and Binary Search Algorithm.

7.   A) Write a C program to Prints the Fibonacci series up to a given number using recursion. Also measure the time taken to compute the Fibonacci series(use clock() function from<time.h> header file)

    B) Write a C program to en queue elements to the queue, de queue elements from the queue and display the elements of the queue.

8.   A) Write a C program to Prints the Fibonacci series up to a given number using recursion.

Also measure the time taken to compute the Fibonacci series(use clock()function from<time.h> header file)

B)Write a C program to create a Tree and insert elements in to the tree.

9. A) Write a C program to Prints the Fibonacci series up to a given number using recursion. Also measure the time taken to compute the Fibonacci series(use clock()function from<time.h> header file)

    B) Write a C program to perform in-order, pre order, and post-order traversals in a Binary Tree.

10. A) Write a C program to Prints the Fibonacci series up to a given number using recursion. Also measure the time taken to compute the Fibonacci series(use clock()function from<time.h> header file)

    B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

11. A) Write a C program to Prints the Fibonacci series up to a given number using recursion. Also measure the time taken to compute the Fibonacci series(use clock() function from<time.h> header file)

    B) Write a C program to implement Insertion Sort.

12. A) Write a C program to Prints the Fibonacci series up to a given number using recursion. Also measure the time taken to compute the Fibonacci series (use clock()function from<time.h> header file)

    B) Write a C program to implement Linear and Binary Search Algorithm.

13. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to en queue elements to the queue, de queue elements from the queue and display the elements of the queue.

14. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to create a Tree and insert elements into the tree.

15. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to perform in-order, preorder, and post-order traversals in a Binary Tree.

16. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

17. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to implement Insertion Sort.

18. A) Write a C program to find the average of elements of an Array using pointers.

    B) Write a C program to implement Linear and Binary Search Algorithm.

19. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to enqueue elements to the queue, dequeue elements from the queue and display the elements of the queue.

20. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to create a Tree and insert elements in to the tree.

21. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to perform in-order, preorder, and post-order traversals in a Binary Tree

22. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

23. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to implement Insertion Sort.

24. A) Write a C program to create linked list, insert elements at the beginning and display the linked list.

    B) Write a C program to implement Linear and Binary Search Algorithm.

25. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

    B) Write a C program to enqueue elements to the queue, dequeue elements from the queue and display the elements of the queue.

26. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

    B) Write a C program to create a Tree and insert elements into the tree.

27. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

    B) Write a C program to perform in-order, pre order, and post-order traversals in a Binary Tree.

28. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

29. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

    B) Write a C program to implement Insertion Sort.

30. A) Write a C program to push elements on to the stack, pop elements from the stack and display the elements of the stack.

    B) Write a C program to implement Linear and Binary Search Algorithm.

31. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to enqueue elements to the queue, dequeue elements from the queue and display the elements of the queue.

32. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to create a Tree and insert elements in to the tree.

33. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to perform in-order, preorder, and post-order traversals in a Binary Tree.

34. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to perform either Depth First Search or Breadth First Search Traversal.

35. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to implement Insertion Sort.

36. A) Write a C program to store and print student information using structures and arrays.

    B) Write a C program to implement Linear and Binary Search Algorithm.

Allocation Of Marks

Sl. No	Description	Marks
1	Aim(05), Procedure from Part A (30)	35
2	Aim(05), Procedure from Part B (30)	35
3	Executing anyone from (Part A **OR** Part B)	15
4	Output	10
5	Viva Voce	05
	Total	**100**