Regd. No.:_____

(CSC N-2305)

B.Sc. DEGREE (CBCS) EXAMINATIONS, SEPTEMBER-2022

SEMESTER-II

DATA STRUCTURES USING C

Time: 3 hours | Max Marks: 60

Section-A

Answer any **Five** from the following questions **5 x 4 =10 Marks**

1. Explain how Integer, real, and characters are represented in computer Memory?
2. Define Data Structure? Explain the difference between Linear and Non Linear Data Structure?
3. Write a C Program to Transpose of Given Matrix??
4. Explain the difference between Array and Linked List?
5. Define Recursion? Explain how recursive functions are evaluated with suitable example?
6. Explain applications of Queues?
7. Define Tree and Binary Tree? Explain the difference between them?
8. Define 2-Tree and Complete Tree with suitable example?
9. Write a C program for Linear Search?
10. Define Indegree and Outdegree of node ?

Section-B

Answer ALL the following questions **5 x 8 = 40 Marks**

11.a) Define ADT? Explain the use of ADT with suitable example?

(OR)

b) Define Software Engineering? Explain the phases in Software Development Life Cycle?

12. a) Define Array? Explain Array Operations in detail with neat diagrams?

(OR)

b) Define Doubly Linked List? Explain Doubly Linked List operations in detail?

13. a) Write a Algorithm for Converting Infix Expression to Postfix with suitable example?

(OR)

b) Define Queue? Explain the operations of Queue implementation using Linked List in detail?

14. a) Explain various methods for representing Trees in Computers Memory?

(OR)

b) Define Binary Search Tree? Explain Binary Search Tree Operations in detail?

15. a) Write an algorithm for Quick Sort with suitable example?

(OR)

b) Explain Graph Traversal Techniques in detail with suitable example?

Regd.No:_____

(CSC - 4305)

B.Sc Degree (CBCS) Examinations-July 2022

SEMESTER-IV (BACKLOG)

DATA STRUCTURES

TIME: 3 Hrs Max Marks:60

SECTION – A

Answer any FIVE of the following **5 x 4 = 20 M.**

1. List out various advantages of Linked List over arrays
2. Write about Sparse Matrix
3. List any Five Applications of Stack
4. How to represent Binary Trees in Memory?
5. What are the advantages of Circular Queue over Ordinary Queue?
6. Write about Threaded Binary Trees
7. Define Graph. What are different types of Graphs?
8. What is Adjacency Matrix and Adjacency List?
9. Write algorithm for Linear Search
10. Write algorithm for Insertion Sort

SECTION – B

Answer the following questions **5 x 8 = 40 M**

11. (a) What is Data Structure? Explain Classification of Data Structure in detail

(OR)

(b) Write algorithms to perform creation and deletion operation in Double Linked List

12. (a) Define Stack ADT. Write algorithms of PUSH and POP operation on stack using Arrays

(OR)

(b) Define Queue ADT. Write algorithms to insert and delete elements from Queue using Arrays

13. (a) What is Binary Tree? Explain Various Tree Traversal Techniques with an example

(OR)

(b) Explain Algorithms for Creation and insertion of a node in a Binary Search Tree

14. (a) Define Graph? Explain DFS Traversal Algorithm with an example

(OR)

(b) Briefly discuss Minimum Spanning Tree and various ways to find it

15. (a) Explain Quick sort and arrange the following numbers in increasing order using Quick sort. (26, 54, 1, 65, 24, 11, 59, 99, 26, 12, 2, 89)

(OR)

(b) Explain Merge sort with an example

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(CSC 4305)

B.Sc (MPCS, MECS & MSCS) Degree (CBCS) Examinations

MARCH - 2019

EXAMINATION AT THE END OF IV SEMESTER

PART-II

DATA STRECTURES

TIME : Two and half hours | Maximum : 60 Marks

PART – I

Answer any FIVE of the following questions. 5x4 =20 M

1. Define ADT?
2. Explain about advantages and disadvantages of single Linked List?
3. Write short notes on DEQUEUE (Double Ended Queue)?
4. Briefly explain about Stack using Linked List?
5. Write about Binary Tree representation methods?
6. Explain about Threaded Binary Tree?
7. What is Adjacency List?
8. What is Directed Graph Explain with example?
9. Explain about Binary Search Algorithm?
10. Write algorithm for Selection Sort?

PART – II

Answer the following questions. 5x8 =40 M

11. Explain different types of Linked Lists?

(OR)

Explain Linear Data Structures and Non Linear Data Structures?

12. What is Queue? Explain about algorithms for insertion, deletion and display operations on Queue using arrays?

(OR)

What is Stack? Explain operations on Stack?

13. Give Brief description on applications of Binary Search Tree?

(OR)

What is Binary Search Tree? Explain algorithms for Creation and Insertion of Node into Binary Search Tree?

14. Explain about BFS (Breadth First Search) algorithm on a Graph with example?

(OR)

What is Spanning Tree? Write algorithm for Minimum Spanning Tree?

15. Explain Quick Sort Algorithm with example?

(OR)

Explain Merge Sort Algorithm with example?

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(CSC 4305)

B.Sc (MPCS, MECS & MSCS) Degree (CBCS) Examinations

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NOVEMBER- 2020

EXAMINATION AT THE END OF IV SEMESTER

PART-II COMPUTER SCIENCE

DATA STRUCTURES

TIME : Two hours | Maximum : 60 Marks

PART – I

Answer any FOUR of the following questions. 4X6=24M

1. What is Data Structure and write about classification of data structures?
2. Explain about advantages and disadvantages of Single Linked List?
3. Explain different types of Queues?
4. Briefly explain about Stack using Linked List?
5. Explain about Heap Tree?
6. Write about Binary Tree representation methods?
7. What is Directed Graph Explain with example?
8. What is Adjacency Matrix?
9. Explain about Linear Search Algorithm?
10. Explain about Time and Space Complexity?

PART – II

Answer Any Three Of The Following 3X12=36M

11. a) Explain Linear Data Structures and Non Linear Data Structures?

(OR)

b) What is Single Linked List? Write algorithms for insertion, deletion and display operations on Single Linked List?

12. a) What is Stack? Explain about algorithms for push, pop and display operations on Stack using arrays?

(OR)

b) What is Circular Queue? Explain about algorithms for insertion, deletion and display Operations on Circular Queue using arrays?

(PTO)

13. a) What is Binary Search Tree? Explain algorithms for Creation and Insertion of node into Binary Search Tree?

(OR)

b) What is Binary Tree? Explain about In order, Pre order and Post order traversal algorithms on Binary Tree?

14. a) What is Spanning Tree? Write algorithm for Minimum Spanning Tree?

(OR)

b) Explain about DFS (Depth First Search) algorithm on a Graph with example?

15. a) Explain Merge Sort Algorithm with example?

(OR)

b) Explain about Binary Search Algorithm with example?

(CSC 4305)

B.Sc (MPCS, MECS & MSCS) Degree (CBCS) Examinations

OCTOBER - 2020

EXAMINATION AT THE END OF IV SEMESTER

PART-II COMPUTER SCIENCE

DATA STRECTURES

TIME : Two hours Maximum : 60 Marks

Answer Any Four of the following Questions 4X6 = 24M

1. What is Data structure and Write about Classification of data structures?
2. What is Array? Write algorithm for linear search operation on array?
3. Write a Short notes on DEQUEUE?
4. Write short notes on Priority Queue?
5. Write about Binary tree representation methods?
6. Explain about Heap tree?
7. What is Directed graph and Explain with Example?
8. Explain Adjacency matrix?
9. Write algorithm for Selection sort?
10. Write short notes on Time/Space complexity of an algorithm?

Part-II

nswer Any Three ; Questions 3X12=36M

11. What is Single linked list? Write algorithms for insertion, deletion, and display operations on single linked list?

    (Or)

    What is Double linked list? Write algorithms for creation and display operations on double linked list?

12. What is Stack? Explain about algorithms for Push, Pop and Display operations on stack using arrays?

    (Or)

    What is Circular Queue? Explain about algorithms for insertion, deletion and display operations on circular queue using arrays?

13. What is Binary Tree? Explain about INORDER, PREORDER and POST ORDER traversal algorithms on Binary Tree?

    (Or)

    What is Binary search tree? Explain Algorithms for Creation and Insertion of note into Binary search Tree?

14. Explain about BFS(Breadth First Search) algorithm on a Graph with example?

    (Or)

    What is spanning tree? Write algorithm for minimum spanning tree?

15. Explain about Quicksort algorithm with example?

    (Or)

    Explain about Binary search algorithm with example?

XXXXX

16/9/2021

(CSC 4305)

B.Sc (MPCS, MECS & MSCS) Degree (CBCS) Examinations

AUGUST - 2021

EXAMINATION AT THE END OF IV SEMESTER

PART-II COMPUTER SCIENCE

DATA STRUCTURES

TIME : Three hours | Maximum : 60 Marks

SECTION – A

nswer any FIVE of the following **5 x 4 = 20 M**

1. Compare and Contrast array with Linked List
2. Convert the following infix to postfix using stack (A+B*C-(D/E+F*(G-H)/I))
3. List any Five Applications of Queues
4. Define Binary Tree and How to represent Binary Trees in Memory
5. Write a short note on File Structures
6. Write about Heap Trees
7. Define Graph. What are different types of Graphs?
8. What is Adjacency Matrix and Adjacency List?
9. Write algorithm for Linear Search
10. Write algorithm for Selection Sort

SECTION – B

ıswer the following questions **5 x 8 = 40 M**

11. (a) What is Data Structure? Explain Classification of Data Structure in detail

(OR)

(b) Write algorithms to perform insertion and deletion operation at various places in Single Linked List

12. (a) Define Stack ADT. Write algorithms of PUSH and POP operation on stack using Stack

(OR)

(b) Define Queue ADT. Write algorithms to insert and delete elements from Queue using linked list

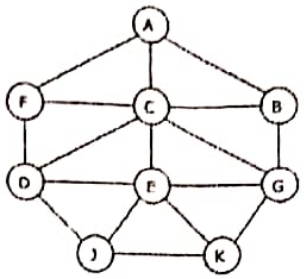
(PTO)

13. (a) What is Binary Search Tree? Explain Various Tree Traversal Techniques with an example

(OR)

(b) Explain insertion and deletion of a node in a Binary Search Tree

14. (a) Define Graph? Explain BFS Traversal of the following Graph



(OR)

(b) Briefly discuss Minimum Spanning Tree and various ways to find it

15. (a) Explain Quick sort and arrange the following numbers in increasing order using Quick sort. (26, 54, 1, 65, 24, 11, 59, 99, 26, 12, 2, 89)

(OR)

(b) Write algorithm for Binary Search and demonstrate it with an example

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30-10-21

(CSC N 2305)
B.Sc. Degree (CBCS) Examinations
OCTOBER - 2021
EXAMINATION AT THE END OF II SEMESTER
PART - II
DATA STRUCTURES USING "C"

TIME : Three hours

Maximum :

PART – I

Answer any **FIVE** of the following questions 5x4=20M

1. Define ADT?
2. Explain recursion in detail?
3. Explain Dynamic memory allocation.
4. Write the advantages and disadvantages of array and linked lists?
5. Explain different types of QUEUES
6. Explain about creation of STACK?
7. Explain Binary tree traversal?
8. Explain about Heap Tree?
9. Explain about bubble sort algorithm.
10. Explain about linear search algorithm?

PART-II

Answer the following questions 5x8=40M

11. What are the goals of data structure? Write linear and non Linear data structure with example

(Or)

What is an ARRAY? Explain types of Arrays with syntax and suitable example.

12. Explain different data types in C?

(or)

Explain different types of linked lists.

13. What is a STACK? Explain the algorithm to create and delete items in stack.

(or)

What is circular Queue? Explain operations on circular Queue?

14. Write algorithm to delete operation in any binary search tree.

(OR)

What is graph? How to represent graph traversal?

15. Explain Merge sort algorithm with an example?

(or)

Explain Quick sort algorithm with an example?

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