

B.Sc.(IT) Semester - 2 (CBCS) Examination
March/April – 2023 (New Course)
Data Structure & File Structure using C (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1(A) Answer the following questions. (03)

1. List out type of Array.
2. Pointer is defining by which symbol?
3. Linear search is also known as_____.

Q.1(B) Answer the following questions. (Any Two) (06)

1. What is Pointer? Explain with Pointer Arithmetic.
2. Explain Time Complexity and Space Complexity.
3. What is Array? Explain 2-D array with example.
4. Write Algorithm for Quick sort.

Q.1(C) Answer the following questions. (Any One) (05)

1. Write a program for Binary search.
2. Explain primitive and non-primitive data types.

Q.2(A) Answer the following questions. (03)

1. Queue is work base on which method?
2. TOS Stands for.....
3. Stack is work base on which method?

Q.2(B) Answer the following questions. (Any Two) (06)

1. Explain priority of queue.
2. What is Stack? Explain with its Application.
3. Explain double ended queue.
4. Explain: Empty Stack, Overflow Stack and Underflow Stack.

Q.2(C) Answer the following questions. (Any One) (05)

1. Write a menu driven program for Static Stack with push, pop and display operation.
2. Write a menu driven program for Circular Queue.

Q.3(A) Answer the following questions. (03)

1. DMA Stands for.....
2. In Link list link part contains _____ of next node.
3. In double linked list each node contains _____ fields.

Q.3(B) Answer the following questions. (Any Two) (06)

1. Write a program for sorting linked list.
2. Difference between Array and Linked list.
3. Write down Application of Linked List.
4. Write an Algorithm for the Insert as A Specific node in linked list.

- Q.3(C) Answer the following questions. (Any One) (05)**
1. Write function to perform following operation on singly linked list.
(A) Create (B) Display.
 2. Explain DMA function in detail.
- Q.4(A) Answer the following questions. (03)**
1. What is NULL Graph?
 2. What is Forest?
 3. What is Vertex?
- Q.4(B) Answer the following questions. (Any Two) (06)**
1. Explain Spanning Trees in detail.
 2. Explain Complete Binary Tree in detail.
 3. Explain Directed Graph and Undirected Graph.
 4. Define following terminology.
(A) Root (B) Descendant (C) Ancestor
- Q.4(C) Answer the following questions. (Any One) (05)**
1. Write short note on Shortest path problem.
 2. Write an algorithm for inorder, postorder, preorder.
- Q.5(A) Answer the following questions. (03)**
1. FAT Stands for.....
 2. NTFS Stands for.....
 3. What is File?
- Q.5(B) Answer the following questions. (Any Two) (06)**
1. Explain Disk Space allocation.
 2. Explain Sequential access file organisation in detail.
 3. Explain Linear Hashing in detail.
 4. What is Record and Data?
- Q.5(C) Answer the following questions. (Any One) (05)**
1. Explain Index-Sequential access file organisation with advantage and disadvantage.
 2. Explain tree-structured directory system in detail.
