

B.Sc.(IT) Semester - 2 (CBCS) Examination
June/July-2022 [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) **Attempt the following** (03)
1. Which operator is use to access member variable when structure variable is pointer type?
 2. Quick sort is work with which method.
 3. Linear search is also known as ____.
- Q.1(B) **Answer the following: (any Two)** (06)
1. What is Pointer? Explain with Pointer Arithmetic.
 2. What is Structure? Explain with suitable example.
 3. What is Binary Search? Explain with Algorithm.
 4. Write a program for Quick sort.
- Q.1(C) **Answer the following: (any One)** (05)
1. Write a program for Merge Sort.
 2. What is Pointer? Explain pointer Arithmetic in detail.
- Q.2(A) **Attempt the following** (03)
1. FCFS Stands for.
 2. TOS Stands for.
 3. LIFO Stands for.
- Q.2(B) **Answer the following: (any Two)** (06)
1. What is Polish notation and Reverse polish notation?
 2. What is Stack? Explain with its Application.
 3. Explain Circular Queue with Program
 4. Explain: Empty Stack, Overflow Stack and Underflow Stack.
- Q.2(C) **Answer the following: (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 simple Queue.
- Q.3(A) **Attempt the following** (03)
1. To change the size of dynamically allocated memory _____ function is use.
 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: (any Two)** (06)
1. What is DMA? Explain Calloc () with example.
 2. Difference between Array and Linked list.
 3. Write down Application of Linked List.
 4. Write an Algorithm for the Insert as A First in doubly linked list.
- Q.3(C) **Answer the following: (any One)** (05)
1. Write function to perform following operation on singly linked list.
(A) Create (B) Sorting (C) Searching (D) Display.
 2. Write a program for merge two linked list.
- Q.4(A) **Attempt the following** (03)
1. BFS Stands for.
 2. List out tree traversal method.
 3. What is Directed Graph?

- Q.4(B) **Answer the following: (any Two)** (06)
1. Explain Depth First Search in detail.
 2. Explain Binary Search Tree in detail.
 3. What is Shortest path problem.
 4. Define following terminology.
(A) Root (B) Descendant (C) Ancestor
- Q.4(C) **Answer the following: (any One)** (05)
1. Write a program for Binary Tree.
 2. Write an algorithm for inorder, postorder, preorder.
- Q.5(A) **Attempt the following** (03)
1. FAT Stands for.
 2. NTFS Stands for.
 3. What is Hashing?
- Q.5(B) **Answer the following: (any Two)** (06)
1. Write short note on Disk Space allocation.
 2. Explain Sequential access file organisation with advantage and disadvantage.
 3. Explain Linear Hasing in deail.
 4. What is Record and Data?
- Q.5(C) **Answer the following: (any One)** (05)
1. Explain Index-Sequential access file organisation with advantage and disadvantage.
 2. Explain tree-structured directory system in detail.
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