

B.C.A 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. Define Space Complexity.
 2. Define Record.
 3. List out types of Array.
- Q.1(B) Answer the following questions. (Any Two) (06)**
1. Write a Program for Linear Search.
 2. Define Structure with suitable example.
 3. Explain Pointer with suitable example.
 4. Write an algorithm for Selection Sort.
- Q.1(C) Answer the following questions. (Any One) (05)**
1. List out all the types of array in brief & also give suitable example for any one type.
 2. Write a program for Binary Search.
- Q.2(A) Answer the following questions. (03)**
1. Full form of Lifo.
 2. Full form of Fifo.
 3. Define Peep operation in Stack.
- Q.2(B) Answer the following questions. (Any Two) (06)**
1. Write algorithm for update operation in stack.
 2. List out all the operation of stack in brief.
 3. Define Polish Notation in Data Structure in brief [Infix, Postfix & prefix] with suitable example.
 4. Explain Circular Queue with all the operation in brief.
- Q.2(C) Answer the following questions. (Any One) (05)**
1. Write a program for Push & Pop operation of stack.
 2. Explain double Ended Queue with all the operation in brief.
- Q.3(A) Answer the following questions. (03)**
1. How many way the Doubly Link List will Traverse?
 2. Full form of Malloc().
 3. What “Info” is indicating in Singly Link List?
- Q.3(B) Answer the following questions. (Any Two) (06)**
1. Define Singly Link List with all the operations.
 2. Write down the code for Insert_First & Insert_Last in singly Link List.
 3. Write down the algorithm for Delete Last in doubly Link List.
 4. Define Circular Link List in brief.

- Q.3(C) Answer the following questions. (Any One) (05)**
1. Write down the code for the following operation in Doubly Link List.
 - Insert First Node
 - Insert Node By Position
 - Display All the Nodes
 2. Explain Dynamic Memory Allocation in brief.
- Q.4(A) Answer the following questions. (03)**
1. Full form of DFS.
 2. Write down the rule for Pre-order Traversal method.
 3. Full form of BST.
- Q.4(B) Answer the following questions. (Any Two) (06)**
1. Define shortest path problem in brief.
 2. List out types of binary tree in brief.
 3. Explain the Graph Traversal method in brief.
 4. Explain Spanning Tree in brief.
- Q.4(C) Answer the following questions. (Any One) (05)**
1. Explain Tree Traversal method in brief with suitable example.
 2. Explain types of graph in brief with its diagram.
- Q.5(A) Answer the following questions. (03)**
1. Full Form for FAT.
 2. Define NTFS system.
 3. Explain Index.
- Q.5(B) Answer the following questions. (Any Two) (06)**
1. Explain Linear Hashing in brief.
 2. Explain Disk Space Allocation in brief with suitable example.
 3. Explain File System Services in brief.
 4. Explain MS_DOS FAT file system in brief.
- Q.5(C) Answer the following questions. (Any One) (05)**
1. Explain Tree Structured Directory System in brief.
 2. Explain Index Sequential File in brief.
