

B.C.A Semester - 2 (CBCS) Examination
March/April - 2023 (OLD COURSE)
CS-07 DATA STRUCTURE USING C LANGUAGE (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. (04)**
1. What is Best Case Analysis?
 2. List out various DMA functions with syntax.
 3. Define Enumeration.
 4. Define array of pointer.
- Q.1(B) Answer the following questions. (Any One) (02)**
1. Explain Average Case Analysis.
 2. Explain the use of pointer.
- Q.1(C) Answer the following questions. (Any One) (03)**
1. Write advantages of pointer.
 2. Explain pointer arithmetic.
- Q.1(D) Answer the following questions. (Any One) (05)**
1. Explain big-oh and big-omega Notation.
 2. Explain Dynamic memory allocation.
- Q.2(A) Answer the following questions. (04)**
1. List out various Graph traversal methods.
 2. Define binary searching.
 3. Full form of BFS.
 4. Which sorting method known as partition exchange sort?
- Q.2(B) Answer the following questions. (Any One) (02)**
1. Explain Index searching.
 2. What is breadth first search & Depth first Search?
- Q.2(C) Answer the following questions. (Any One) (03)**
1. Explain Bubble Sort.
 2. Explain Insertion Sort.
- Q.2(D) Answer the following questions. (Any One) (05)**
1. Explain quick sort method with example.
 2. Explain minimal spanning tree.
- Q.3(A) Answer the following questions. (04)**
1. Define Data structure.
 2. What is primitive data structure?
 3. Define Stack.
 4. What is priority queue?
- Q.3(B) Answer the following questions. (Any One) (02)**
1. Explain Linear and non-Linear structure.
 2. What is postfix & prefix Expression?

- Q.3(C) Answer the following questions. (Any One) (03)**
1. What is Recursion?
2. Write note on Queue.
- Q.3(D) Answer the following questions. (Any One) (05)**
1. Explain Stack With Example.
2. Write a UDF to insert Element in Stack.
- Q.4(A) Answer the following questions. (04)**
1. List out various types of Linked List.
2. Define Header Linked List.
3. What is circular List?
4. Define Linked-List.
- Q.4(B) Answer the following questions. (Any One) (02)**
1. Difference between Singly List and Doubly list.
2. Explain Node in Linked List.
- Q.4(C) Answer the following questions. (Any One) (03)**
1. How link list is differing an array?
2. Write a UDF to display all nodes of Circular singly list.
- Q.4(D) Answer the following questions. (Any One) (05)**
1. Explain Merging process of two Lists.
2. Write a menu-driven program that performs basic operations on header list.
- Q.5(A) Answer the following questions. (04)**
1. Define Binary Tree.
2. Define root node.
3. What is b-tree?
4. List various Traversal of binary tree.
- Q.5(B) Answer the following questions. (Any One) (02)**
1. Explain properties of binary tree.
2. What is in-degree & out-degree of node?
- Q.5(C) Answer the following questions. (Any One) (03)**
1. Write a UDF to search key from BST (binary search tree).
2. Explain Height-balanced tree.
- Q.5(D) Answer the following questions. (Any One) (05)**
1. Explain insertion and deletion process in binary search tree.
2. Difference between binary tree & binary search tree.
