

**B.C.A Semester - 2 (CBCS) Examination**  
**March/April– 2019 (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:****(03)**

1. Explain Time Complexity
2. List out types of Array.
3. Which sign is use to define pointer.

**(Q-1)(B). Answer the following: (Any Two)****(06)**

1. List out types of Array and explain any one with example
2. Write algorithm for the Selection Sort.
3. Explain Pointer Arithmetic in brief.
4. Algorithm for Linear search.

**(Q-1)(C). Answer the following: (Any One)****(05)**

1. Define structure and explain it with example
2. Write a program for the Linear Search.

**(Q-2)(A). Answer the following:****(03)**

1. Full form of LIFO.
2. Which method follows by Queue?
3. The PUSH operation indicates \_\_\_\_\_ in Stack programming.

**(Q-2)(b). Answer the following: (Any Two)****(06)**

1. List out the operations perform in stack and explain any two of them
2. Explain the De-Queue with Memory allocation diagram.
3. Write down the algorithm for the PUSH Operation.
4. Algorithm for INSERT in static queue

**(Q-2)(C). Answer the following: (Any One)****(05)**

1. Write a program for the stack which execute the following operations
  - PUSH
  - PEEP
  - DISPLAY.
2. Explain the circular Queue in brief with all the operation.

**(Q-3)(A). Answer the following:****(03)**

1. Full form of malloc()
2. Explain dynamic memory allocation.
3. If we want to delete the memory then \_\_\_\_\_method is use.

**(Q-3)(B). Answer the following: (Any Two)****(06)**

1. List out the operation perform in the singly Link List.
2. Write down the algorithm for the INSERT FIRST in Singly Link List.
3. Explain INSERT\_BY\_VALUE () and DELETE\_BY\_POSITION ()
4. Algorithm for INSERT\_LAST in singly link list.

**(Q-3)(C). Answer the following: (Any One)**

**(05)**

1. Write a program which executes the following UDF for Singly Link List.
  - CREATE
  - INSERT\_LAST
  - DELELTE\_FIRST
  - DISPLAY
2. Write a program which executes the following UDF for Doubly Link List.
  - CREATE
  - INSERT\_BY\_VALUE
  - DELELTE\_BY\_POSITION
  - DISPLAY

**(Q-4)(A). Answer the following:**

**(03)**

1. Full for of DFS.
2. List out the Tree Traversal Methods
3. Write down the rule for the PRE ORDER traversal type.

**(Q-4)(B). Answer the following: (Any Two)**

**(06)**

1. List out the type of graph and explain any three of them with diagram
2. Explain the graph traversal methods in brief.
3. What is shortest path problem?
4. Explain types of Binary Tree.

**(Q-4)(C). Answer the following: (Any One)**

**(05)**

1. Write a program for the binary searching tree.
2. Explain the Tree traversal method in brief. { WITH EXAMPLE }

**(Q-5)(A). Answer the following:**

**(03)**

1. Full form of FAT.
2. Full form of NTFS.
3. What do you mean by record?

**(Q-5)(B). Answer the following: (Any Two)**

**(06)**

1. Explain Disk Space Allocation.
2. Explain Hashing in brief.
3. Explain the concepts of Indexes.
4. Explain File System Services.

**(Q-5)(C). Answer the following: (Any One)**

**(05)**

1. Explain tree directory structured.
2. Explain the File allocation table

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