647510 **BCA2DscC101x** **Seat No :_____**

B.C.A 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.

Q.1(A) **Answer the following questions.** (03)

1. Define Space Complexity.
2. Define Data.
3. Define Record.

Q.1(B) **Answer the following question. (Any two)** (06)

1. List out types of Array and explain with example.
2. Define Structure with example.
3. Define pointer arithmetic in brief.
4. Write down the Algorithm for Selection sort.

Q.1(C) **Answer the following question. (Any one)** (05)

1. Write down the difference between Structure V/s Union.
2. Write down the program for the Bubble sort.

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

1. Full form of LIFO.
2. Full form of TOS.
3. List out the operation of Queue.

Q.2(B) **Answer the following question. (Any two)** (06)

1. Explain and list out operation on queue.
2. Write down the algorithm for push.
3. Define push and pop and in brief.
4. Write down the difference between Circular Queue V/s Double Ended Queue.

Q.2(C) **Answer the following question. (Any one)** (05)

1. Write a program for Push and Pop operation in stack.
2. Write a program for Insert, Delete and search operation in Queue.

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

1. Full form of Realloc().
2. Define free ().
3. Define Dynamic Memory Allocation.

Q.3(B) **Answer the following question. (Any two)** (06)

1. Define the singly Link List concept.
2. Define the doubly Link List concept.
3. Write algorithm for insert_first in singly link list.
4. Write a program for insert_first, insert_last, delete_first, delete_last for doubly link list.

Q.3(C) **Answer the following question. (Any one)** (05)

1. Write a program for insert_first, insert_last, delete_first, delete_last for singly link list.
2. Write algorithm for delete_first and last in doubly link list.

Q.4(A) **Answer the following questions.** (03)

1. List out tree traversal method.
2. Full form of BFS.
3. Full form DFS.

Q.4(B) **Answer the following question. (Any two)** (06)

1. Explain and list out the types of graphs in brief.
2. Define pre-order in brief
3. Define shortest path problem in brief.
4. Define types of tree in brief.

Q.4(C) **Answer the following question. (Any one)** (05)

1. Explain types of binary tree in brief.
2. Write a program for tree traversal method.

Q.5(A) **Answer the following questions.** (03)

1. Full form of FAT.
2. Full form of NTFS.
3. Define concept field.

Q.5(B) **Answer the following question. (Any two)** (06)

1. Define Disk space allocation.
2. Define the concept file allocation table in brief
3. Define the concept of sequential files
4. Define the concept index sequential file system.

Q.5(C) **Answer the following question. (Any one)** (05)

1. Define the concept of Hashing in brief.
2. Define tree structured directory in brief.

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