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

B.C.A Semester - 2 (*CBCS*) Examination
March/April – 2024 (As Per Syllabus Year-2018)
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.

Que.1(A) Give Answers of following Questions. (03)

(1) Define Data structure.

(2) List two types of data structure.

(3) Define Records.

Que.1(B) Attempt the following. (Any Two) (06)

(1) Explain two dimensional array.

(2) Explain pointer with example.

(3) Write down algorithm of selection sort.

(4) Write down algorithm of Bubble sort.

Que.1(C) Attempt the following. (Any one) (05)

(1) Difference between linear and non-linear data structure.

(2) Explain Structure with example.

Que.2(A) Give Answers of following Questions. (03)

(1) Define Stack.

(2) Full form of FIFO.

(3) Full form of LIFO.

Que.2(B) Attempt the following. (Any Two) (06)

(1) Explain push operation in stack.

(2) Explain pop operation in stack.

(3) Explain any one operation in Queue.

(4) Explain difference between input and output restricted.

Que.2(C) Attempt the following. (Any one) (05)

(1) Explain Double ended Queue.

(2) Explain Circular Queue.

Que.3(A) Give Answers of following Questions. (03)

(1) Full form of DMA.

(2) Define free()

(3) What is Node?

Que.3(B) Attempt the following. (Any Two) (06)

(1) Explain singly linked list.

(2) Explain concept of doubly linked list.

(3) Explain malloc(), calloc() and realloc().

(4) Explain Traverse the linked list.

Que.3(C) Attempt the following. (Any one) (05)

(1) Write an algorithm to insert first node in linked list.

(2) Write an algorithm to insert last node in linked list.

Que.4(A) Give Answers of following Questions. (03)

(1) Define tree.

(2) Full form of DFS

(3) Define binary Tree.

Que.4(B) Attempt the following. (Any Two) (06)

(1) Explain Pre-order traversal tree.

(2) Explain Post-order traversal tree.

(3) Write algorithm of binary tree implementation.

(4) Explain spanning tree.

Que.4(C) Attempt the following. (Any one) (05)

(1) Explain Graph with example.

(2) Explain Binary Search tree with example.

Que.5(A) Give Answers of following Questions. (03)

(1) Full form of FAT.

(2) Full form of NTFS.

(3) What is Disk space allocation?

Que.5(B) Attempt the following. (Any Two) (06)

(1) Explain Indexes.

(2) Explain concept of fields and files.

(3) Define structure directory in brief.

(4) Explain dynamic hashing.

Que.5(C) Attempt the following. (Any one) (05)

(1) Write note on linear hashing.

(2) Write note on Sequential file.

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