647510 **BIT2DscC101x** **Seat No :_____**

B.Sc.(IT) Semester - 2 (*CBCS*) Examination
March/April – 2026 (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.

Que.1(A) Attempt following questions. (03)

1. What is an Array?
2. What is Pointer?
3. Static storage class member default initialize with _____ value.

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

1. Explain characteristics of a Data Structure.
2. Explain types of Linear data structure in brief.
3. Explain pointer arithmetic with an example.
4. Explain types of array with an example.

Que.1(C) Attempt following questions. (Attempt Any One) (05)

1. Explain Selection Sort with an example.
2. Explain Binary Search with an example.

Que.2(A) Attempt following questions. (03)

1. What is Stack?
2. What is Queue?
3. What is Circular Queue?

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

1. Explain push( ), pop( ) and peep( ) operation on stack.
2. Explain Polish Expression with an example.
3. Explain Priority Queue.
4. Explain applications of Queue.

Que.2(C) Attempt following questions. (Attempt Any One) (05)

1. Explain operations perform on Queue in detail.
2. Write note on Double Ended Queue.

Que.3(A) Attempt following questions. (03)

1. In singly linked list, last node next pointer contains _____ value.
2. In dynamic stack, Tos default initialize with _____ value.
3. ____ linked list contain pointer to next and pointer to previous node.

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

1. Explain applications of Linked List.
2. Explain insert_first, insert_last operation on singly linked list.
3. Explain push( ) and peep( ) operation algorithms on dynamic stack.
4. Explain delete_first, delete_last operation on doubly linked list.

Que.3(C) Attempt following questions. (Attempt Any One) (05)

1. Explain Dynamic Memory allocation functions with example.
2. Explain sorting and searching operation on linked list.

Que.4(A) Attempt following questions. (03)

1. Node without children is called _____.
2. BST stands for _____.
3. In _____ tree traversal technique root access at last.

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

1. Explain implementation of Binary Tree with example.
2. Write short note on Shortest path.
3. Explain applications of Trees in brief.
4. Explain complete binary tree with example.

Que.4(C) Attempt following. (Attempt Any One) (05)

1. What is tree traversal? Explain tree traversal techniques with example.
2. Explain Breadth First Search and Depth First Search with example.

Que.5(A) Attempt following questions. (03)

1. FAT stands for _____.
2. What is file?
3. What is field?

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

1. Explain file system structure in brief.
2. Explain file system services in brief.
3. Explain file allocation table in brief.
4. Explain tree structure directory system in brief.

Que.5(C) Attempt following questions. (Attempt Any One) (05)

1. Explain disk space allocation techniques in detail.
2. Explain Hashing with suitable example.

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