12. Explain DFS algorithm with example.

Or

13. Explain graph connectivity and components.

Section D

14. Explain declaration and initialization of one-dimensional and two-dimensional arrays with examples.

Or

15. Explain pointer to array with suitable examples and program.

16. Explain stack representation, operations, and applications in detail.

Or

17. Explain dynamic memory management and linked representation.

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52051

B.C.A. EXAMINATION, 2026

(Second Semester)

(From 2019-20 Onwards)

(Re-appear Only)

DATA STRUCTURES USING C

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : All questions are compulsory. Each question in Section A of 1 marks, in Section B of 3 marks, in Section C of 6 marks and in Section D of 8 marks.

Section A

1. (i) What is a one-dimensional array ?

(ii) What is a pointer to array ?

(iii) What is binary search ?

(iv) What do you mean by PUSH operation ?

(v) What is circular queue ?

(vi) Define Stack.

(vii) Define binary search tree.

(viii) What is postorder traversal ?

(ix) Define binary search tree.

(x) Define graph connectivity.

(xi) What is DFS ?

(xii) What is BFS ?

Section B

2. Explain declaration and initialization of arrays with example.

3. Differentiate between circular queue and dequeue.

4. Explain inorder traversal with example.

5. Explain matrix representation of graph.

Section C

6. Describe linear search and binary search algorithms.

Or

7. Write a C program for linear search.

8. Explain insertion and deletion in linked list with diagrams.

Or

9. Write a C program for queue operations.

10. Explain threaded binary tree and its advantages.

Or

11. Explain operations on binary search tree.

18. Write a C program for creation and traversal of binary tree.

Or

19. Explain conversion of general tree into binary tree with diagrams.

20. Explain graph isomorphism and homomorphism with examples.

Or

21. Explain shortest path algorithms in detail.

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18. Write a C program for creation and traversal of binary tree.

Or

19. Explain conversion of general tree into binary tree with diagrams.

20. Explain graph isomorphism and homomorphism with examples.

Or

21. Explain shortest path algorithms in detail.

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