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SDCCA201

II Semester B.C.A./B.C.A. (DS) Degree Examination, June/July - 2026
(SEP Scheme Freshers+Repeaters)
COMPUTER APPLICATION
Data Structures Using C

NEW HORIZON COLLEGE LIBRARY KASTURINAGAR BANGALORE-43

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

Instructions :

Answer all the Sections.

SECTION - A

I. Answer any Ten questions. Each question carries 2 marks. (10×2=20)

1. What is linear data structures? Give an example.
2. What is Space Complexity?
3. Write any two memory allocation functions.
4. What are different types of array? Give an example.
5. Define string concatenation? With an example.
6. What is circular linked list?
7. Mention the application of stack.
8. What is circular queue?
9. Explain Queue as ADT.
10. Explain the different ways of tree traversal.
11. Define Cyclic Graph with an example.
12. Define Binary search tree.

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SECTION - B

II. Answer any Six questions. Each question carries 5 marks. (6×5=30)

13. Explain the classification of data structures in detail.

14. Write an algorithm and explain the Bubble Sort.

15. What is Recursion? Write recursion program to find GCD of two numbers.

16. Write a algorithm to search for a node in a singly linked list.

17. Write an algorithm for push and pop operation of a stack.

18. How Queue are represented using Linked list? Explain with an example.

19. Write an algorithm for creation of binary search tree.

20. Write the DFS Algorithm.

SECTION - C

III. Answer any Three questions. Each question carries 10 marks. (3×10=30)

21. a) Write a C program to display Pascal triangle using binomial function. **(5)**
    b) Explain asymptotic notations. **(5)**

22. a) Write an algorithm for Selection sort. **(5)**
    b) Write an algorithm to insert a node at the beginning of the linked list. **(5)**

23. a) Convert the infix expression (A*B/C-E*F^G) +D into postfix expression. **(5)**
    b) Write a C functions to perform insertion and deletion operations of queue using array. **(5)**

24. a) Write an algorithm for In Order and Pre Order Traversal. **(5)**
    b) What is a graph? What are the types of graph? Explain. **(5)**