TB252315E

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, MARCH 2025

2023 ADMISSIONS SUPPLEMENTARY

SEMESTER II - CORE COURSE Computer Applications

CA2C04B23 - Data Structures Using C++

Time : 3 Hours **Maximum Marks : 355**

Part A

I. Answer any Ten questions. Each question carries 2 marks **(10x2=20)**

1. Briefly explain the insertion sort technique.
2. What is the concept of binary search ?
3. Generalize sorting technique?
4. What do you meant by stack data structure ?
5. Convert the expression ((A + B) * C - (D - E) ^ (F + G)) to equivalent Prefix and Postfix expressions.
6. What are the two important operations carried out in a stack ?
7. Define traversing.
8. What is merging ?
9. Define node. What are the types of nodes ?
10. Define the following terms according to binary tree. a) Sibling b) depth
11. Name any two collision resolving methods.
12. Name any four file operations

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Write a c ++ program to find the desired element in an array using binary search technique.
14. Explain Polish notations with examples.
15. Discuss the following :- a) Double ended queue b) Priority queue
16. Write the steps involved in adding polynomials.
17. Write an algorithm to inset a node at specified location given by the user.
18. Write the algorithm for binary tree creation.
19. Write the algorithm and function for postorder traversal with example.
20. Explain the following:- a) fstream,h b) ofstream c) ifstream d) file mode e) open and close functions
21. Write a file program to create employee details(emp_name, empl_code and salary) and read the same file contents.

Part C

III. Answer any Two questions. Each question carries 15 marks **(2x15=30)**

22. Write the algorithm to convert the infix expression into postfix form . Do the following :- Convert A + (B * C - (D / E - F) * G) * H into postfix form showing stack status after every step in tabular form.
23. Explain different types of Linked list with examples.
24. Explain the concept of recursion with suitable example. Write an algorithm and program for the following :- a) To print Fibonaacii series upto n numbers, b) factorial of a given number. c) Binary search technique.
25. Explain File and its operations in detail.