TB242199B

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024

2023 ADMISSIONS REGULAR

B.VOC S.W.D SEMESTER III - CORE COURSE

VSD3SO5B23 - Data Structures Using C++

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

Part A

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

1. Give the polynomial representation with example.
2. Briefly explain different types of Data structures.
3. Define Arrays.
4. Discuss dynamic allocation of memory .
5. What is the importance of front and rear pointers in queue.
6. What is the significance of the top in a stack. Explain ?
7. Write the syntax of Linear linked list .
8. Write an algorithm to insert a number in the linked list at the beginning ?
9. Define node. What are the types of nodes ?
10. Define the following terms according to binary tree. a) Sibling b) depth
11. What are the factors for selecting a particular file organisation ?
12. Differentiate Data Base and DBMS.

Part B

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

13. What are the features of an efficient Algorithm ?
14. Briefly explain operations on stack.
15. Briefly explain operations on queue.
16. Write a program to implement circular linked list.
17. Discuss the operations of Linked list with algorithm and Illustration.
18. Give a brief description about different types of trees.
19. Explain the following with example :- a) Terminal node b) Non_Terminal node c) Edge d) Path e) level b) Extended binary tree
20. Discuss any two Hashing techniques in detail.
21. Explain the structure of sequential files and discuss its main operations.

Part C

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

22. Write an algorithm to evaluate postfix expression . Evaluate the given expression 5 6 2 + * 12 4 / - in tabular form showing stack after every step.
23. Write an algorithm to insert a number in the linked list at the following position with suitable example. a) In the beginning b) In the specified location c) at the end of the list.
24. What are the different operations on Binary tree. Explain each with algorithm . Write a program to implement binary tree.
25. Explain Random files and its operations with example.