D 111941   (Pages : 2)   Name...

                                                              Reg. No.....................................

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2024

Computer Science

BCS 3B 04—DATA STRUCTURES USING C

(2019—2023 Admissions)

Time : Two Hours   Maximum : 60 Marks

Section A (Short Answer Type)

All questions can be answered.
Each question carries 2 *marks.*
(Ceiling 20 *marks)*

1. What is data structure ?

2. Define time complexity.

3. Explain String.

4. Differentiate between queue and stack.

5. Explain how a linked list is represented in memory.

6. What are the operations on arrays ?

7. Write a note on binary tree.

8. Explain circular linked list.

9. Explain the term traversal in the context of array.

10. What are weighted graphs ?

11. Explain sequential searching.

12. What is polish notation ?

Turn over

Section B (Paragraph / Problem Type)

All questions can be answered.
Each question carries 5 marks.
(Ceiling 30 marks)

13. Explain the classification of Data Structures

14. Write a C program to implement insertion sort.

15. How linked list is different from array

16. Explain the operations of queue

17. Explain how binary search tree is represented in memory

18. Discuss how recursion works with the help of an example.

19. Describe the applications of stack

Section C (Essay Type)

Answer any **one** *of the following questions.*
The question carries 10 *marks.*

20. Explain the basic operations of doubly (two way) linked list (creation, insertion, deletion).

21. Explain the different tree traversal techniques.

(1 × 10 = 10 marks)