

19U430

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Name: .....

Reg.No: .....

**FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2021**

(CBCSS - UG)

**CC19U CSC4 C04 - DATA STRUCTURES USING C**

(Computer Science - Complementary Course)

(2019 Admission - Regular)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 2

**Part A (Short answer questions)**

Answer *all* questions. Each question carries 2 marks.

1. Define big O notation.
2. What do you mean by an array? Give an example.
3. What do you mean by array deletion operation?
4. Explain sparse matrix with example.
5. What is a linked list? List different types of linked list.
6. What is Circular linked list ? List down the various operations that can be performed on circular linked list.
7. What do you mean by dequeue operation?
8. What is the overflow and underflow of a queue using linked list?
9. What is a circular queue?
10. What is searching ? List the types of searching.
11. What do you mean by sorting ? List various types of sorting techniques.
12. Define merge sort.

**(Ceiling: 20 Marks)**

**Part B** (Short essay questions - Paragraph)

Answer *all* questions. Each question carries 5 marks.

13. What do you mean by data structure? Explain data structure operations.
14. Illustrate array insertion with algorithm.
15. Illustrate array merge with algorithm.
16. How will you perform the operation 'insertion' in double linked list ? Explain with algorithm.
17. Illustrate stack operations using array.
18. Describe how Insertion sort technique works with an example and algorithm.
19. Sort the elements 10, 5, 4, 7, 9, 11, 20 by using Quick sort technique.

**(Ceiling: 30 Marks)**

**Part C** (Essay questions)

Answer any *one* questions. Each question carries 10 marks.

20. Describe stack operations using linked list.
21. Compare the sorting techniques Selection sort and Insertion sort with suitable examples.

**(1 × 10 = 10 Marks)**

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