FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U CSC4 C04 - DATA STRUCTURES USING C

(Computer Science - Complementary Course)

(2019 Admission onwards)

Time : 2.00 Hours   Maximum : 60 Marks

Credit : 2

Part A (Short answer questions)
Answer *all* questions. Each question carries 2 marks.

1. What do you mean by algorithm complexity?

2. Given the base address of an array B[1300…..1900] as 1020 and size of each element is 2 bytes in the memory. Find the address of B[1700]

3. Define array deletion.

4. What are sparse matrix?

5. What is the purpose of using 'GetNode' procedure in Linked list?

6. Define circular Linked list. List down the operations of Circular Linked list.

7. What is overflow and underflow condition in stack using array?

8. Define queue.

9. Given any one application of queue.

10. What is Binary searching?

11. Define insertion sort.

12. What is divide-and-conquer method?

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)
Answer *all* questions. Each question carries 5 marks.

13. Explain different data structure operations in detail.

14. Write a note on array insertion with algorithm.

15. Write the algorithm of array copy.

16. What is a doubly linked list? How will you perform 'Insertion' operation on doubly linked list?

17. What are stacks? What are the various stack operations using linked list?

18. Sort the elements 36, 10, 5, 9, 10 by using Selection sort.

19. What is merge sort? Explain the algorithm of Merge sort.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

20. Illustrate queue operations with suitable example.

21. What is sorting? Sort the elements 10, 8, 6, 23, 15 using Bubble sort and also write down its algorithm.

(1 × 10 = 10 Marks)

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