

19U339

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Name:

Reg.No:

THIRD SEMESTER B.Sc./B.C.A. DEGREE EXAMINATION, NOVEMBER 2020

(CBCSS - UG)

CC19U BCS3 B04 / CC19U BCA3 B04 - DATA STRUCTURE USING C

(Computer Science & Computer Application - Core Course)

(2019 Admission - Regular)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

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

1. Define data structure?
2. What is time complexity ?
3. write down limitations of array data structure?
4. Explain sparse matrix?
5. Differentiate between array and linked list?
6. Define the term doubly linked list?
7. Evaluate the expression $4572 + - *$
8. What are the properties of a complete binary tree?
9. How an element from a binary tree can be deleted?
10. What is the type of expression in which operator succeeds its operands?
11. What do you mean by a cycle in a graph?
12. What is the advantage of hashing in data structure?

(Ceiling: 20 Marks)

Part B (Short essay questions)

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

13. Define Data Structure. What are different classifications of data structures? Explain with examples.
14. Explain the array insert operation?

15. What do you mean by Linked List? Write an algorithm to insert a node in Singly Linked List.
16. Define queue. How insertion and deletion operations are performed over a queue? Explain.
17. Explain Collision Handling techniques in hashing.
18. What is a binary search tree? Explain the operations?
19. How to analyse the efficiency of an Algorithm?

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. What is a stack? Explain push and pop operations in stack using suitable example. Mention any four applications of stack.
21. Discuss the application of graph structures. What are the different methods to traverse graphs ?

(1 × 10 = 10 Marks)
