

18U331

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Name:

Reg. No.....

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

(CUCBCSS-UG)

CC15U BCA3 B04 - DATA STRUCTURES USING C++

(Computer Applications - Core Course)

(2015 & 2016 Admissions - Supplementary)

Time: Three Hours

Maximum: 80 Marks

PART A

Answer *all* questions. Each question carries 1 mark.

1. What is non-linear data structure?
2. What is the best case time complexity of linear search?
3. What is an array?
4. What is ADT?
5. What do you mean by height of a tree?
6. What is a graph?
7. Convert $(A+B)*(A-B)$ into postfix.
8. What is circular linked list?
9. What is priority queue?
10. What is linear probing?

(10 x 1 = 10 Marks)

PART B

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

11. Explain sparse matrix.
12. Explain how memory is allocated in one dimensional array.
13. Write short note on stack.
14. What is double linked list?
15. Explain the concept of cycle in a graph.

(5 x 2 = 10 Marks)

PART C

Answer any *five* questions. Each question carries 4 marks.

16. Write an algorithm to insert and delete element in a queue.
17. Explain binary tree with example.
18. What is recursion? Explain with an example.
19. What do you mean by hashing? Explain collision handling techniques.

20. Explain the algorithm for converting an infix expression to its postfix equivalent.
21. Explain different types of Hash functions with examples.
22. Write a program to search an element in an array.
23. Write an algorithm to add two polynomials

(5 x 4 = 20 Marks)

PART D

Answer any *five* questions. Each question carries 8 marks.

24. What is linked list? Explain insertion and deletion at the beginning and end of a list.
25. Write a program to perform linear search.
26. Explain the operations of circular queue.
27. Explain any two sorting techniques with example.
28. Explain DFS and BFS with example.
29. What is BST? Create a BST using the following 11, 19, 14, 15, 18, 10, 20, 13, 25.
30. Write a program to perform quick sort.
31. Explain the array and linked list representation of binary tree.

(5 x 8 = 40 Marks)
