

B C A DEGREE END SEMESTER EXAMINATION : MARCH 2023
SEMESTER 2 : MOBILE APPLICATIONS AND CLOUD TECHNOLOGY

COURSE : 19U2CRBCA6 : DATA STRUCTURES USING C

(For Regular - 2022 Admission and Improvement / Supplementary – 2021/2020/2019/2018/2017/2016 Admissions)

Time : Three Hours

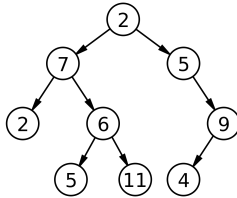
Max. Marks: 75

PART A**Answer All (1 mark each)**

1. What is output restricted queue?
2. Draw the structure of a circular linked list?
3. What is a string?
4. What is primitive data structure?
5. What is height of a node?
6. The process of removal of an element from queue is called -----.
7. Define Bubble sort.
8. What is the time complexity of binary search?
9. What is degree of a tree?
10. What is a head node?

(1 x 10 = 10)**PART B****Answer any 8 (2 marks each)**

11. Write preorder traversal of the following tree?



12. What is a pop operation?
13. What is static memory allocation?
14. Give any two applications of a tree.
15. What is dynamic memory allocation?
16. Difference between Linkedlist and and Array.
17. What is the idea behind selection sort?
18. Define a C node structure for a linked list of students?
19. What is a Queue?
20. What are different types of sorting techniques?

(2 x 8 = 16)**PART C****Answer any 5 (5 marks each)**

21. Write the advantages of doubly linkedlist.
22. Explain types of graphs.

23. What is heap tree and explain types of heap tree?
24. What are the operations performed on queue?
25. Write an algorithm for insertion sort. Discuss with help of an example.
26. Write a C program to concatenate two strings using pointers?
27. Differentiate between POP and PUSH operations.

(5 x 5 = 25)

PART D

Answer any 2 (12 marks each)

28. Write the algorithm to convert infix expression to postfix expression. Sketch the steps in converting the infix expression $A+b*(C+D)/F+G*H$ to postfix.
29. Explain iterative linear search algorithm with example also write the c program.
30. Write a c program to implement linked list creation and traversal.
31. Explain different tree traversal methods with its algorithm and examples? Also write C funtions for each of these traversal methods?

(12 x 2 = 24)