



21102128

QP CODE: 21102128

Reg No :

Name :

B.Sc /BCA DEGREE (CBCS)EXAMINATION, AUGUST 2021

Third Semester

Core Course - CS3CRT08 - DATA STRUCTURE USING C++

Common to Bachelor of Computer Application, B.Sc Computer Applications Model III Triple Main,
B.Sc Computer Science Model III, B.Sc Information Technology Model III

2017 Admission Onwards

1C6149B6

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What are arrays? Describe with example.
2. How can you calculate number of passes in insertion sort?
3. Describe stack overflow and stack underflow.
4. State the differences between linear queues and circular queues.
5. What are the applications of linked list?
6. What are the three instances of deleting a node from a linked list.
7. Define doubly linked list.
8. What is forest in tree terminology ?
9. Create a binary tree for the expression $A+(B+C*D+E)+F/G$.
10. Write short note on structure of linked file organization.
11. What is hashing?
12. How collisions are occurred in hash tables?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. Discuss non-primitive data structures .
14. Explain polynomial representation using array.
15. Explain applications of stacks.
16. Explain priority queues and describe various operations performed on them.
17. Explain the applications of linked stack and linked queue.
18. Describe the term "Garbage collection".
19. Explain how to delete a node from binary tree.
20. Explain insertion of a node in binary search tree with algorithm.
21. List various file operations. Explain each one.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain binary search. Suppose we have an array of 6 elements 9,12,24,30,45,70.Explain the steps to search an element 45 within the array using binary search.
23. Explain operations performed on queues and limitations of linear queues.
24. Explain different structures / types of binary tree with example .
25. What are the different types of file organizations? Explain in detail about sequential and random files.

(2×15=30)

