



23104395

QP CODE: 23104395

Reg No :

Name :

**B.Sc /BCA DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, JANUARY 2023**

Third Semester

Core Course - CS3CRT08 - DATA STRUCTURE USING C++

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

2017 Admission Onwards

09189A90

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What do you mean by structured data?
2. How can you calculate number of passes in quick sort?
3. What is the significance of the TOP in a stack?
4. What are queues?
5. List out the disadvantages of using a linked list.
6. What are the advantages and disadvantages of doubly linked list?
7. What do you mean by memory management?
8. Define tree.
9. What is a binary search tree ?
10. What are sequential files?
11. What are the three separate area in indexed sequential file?
12. What is linked file organization?





(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Explain sparse matrix representation with an example.
14. Explain binary searching method with an example.
15. Evaluate the postfix expression $AB+C*D$ if $A=2, B=3, C=4$ and $D=5$.
16. Explain the working of circular queue.
17. Write an algorithm or program for inserting a node into a sorted linked list.
18. How can we dynamically implement stack and queue?
19. What is a tree. Draw a tree with a degree 2 and write down lchild, father, rchild, siblings using array representation.
20. Describe the method for postorder traversal with a diagram.
21. Briefly explain the different collision resolving techniques.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Define array . Explain operations performed on arrays with algorithms and examples.
23. Differentiate between double ended queue and priority queue. Explain their operational procedures in detail.
24. Explain different structures / types of binary tree with example.
25. What is hashing? Explain in detail about hash table and hashing function.

(2×15=30)

