QP CODE: 23127877

Reg No : .....

Name : .....

B.Sc /BCA DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE EXAMINATIONS, OCTOBER 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

D10C8A9C

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Write examples for primitive and non-primitive data structure.
2. Why binary search operation is better for lager arrays? Justify.
3. Which are the three types of expressions?
4. What is the need of a circular queue?
5. What is an empty list?
6. What are the steps involved in deleting the first node from a linked list?
7. What is a circular linked list?
8. What is a binary search tree ?
9. How will you represent a binary tree using (A>B)||(C ?
10. Discuss the role of records in files.
11. Briefly describe the concept of hashing?
12. How collision is occurred in hashing tables?

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Explain merging operation performed on an array with an algorithm or example.
14. Discuss the difference between sparse matrix and normal matrix.
15. Discuss algorithm for stack operation?
16. Write a algorithm/program for various operations performed on double ended queues?
17. How can we dynamically implement stack and queue?
18. Explain garbage collection.
19. What are tree? What are different terminologies of tree? Describe.
20. Explain strictly binary tree with an example.
21. Explain sequential file structure.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain quick sort algorithm with an example.
23. Explain operations performed on queues and limitations of linear queues.
24. Write note on Binary tree. Explain how an expression can be converted into BT with an example and diagram
25. Explain the following : 1) Linked File Organization 2) Inverted File Organization

(2×15=30)