21100670

QP CODE: 21100670

Reg No : .....

Name : .....

B.Sc/BCA DEGREE (CBCS)EXAMINATION, MARCH 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

EAA5A8EF

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What are the different classifications of non-primitive data structure?
2. Write a note on sparse matrix.
3. What do you meant by push operation on stack?
4. How can we add a new element at end of the queue?
5. What are the advantages and disadvantages of doubly linked list?
6. What do you mean by linked stack and linked queue?
7. Define AVAIL list.
8. Define Recursion.
9. What is a skewed binary tree?
10. Define file.
11. Define file organization.
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. Compare and contrast selection sort and insertion sort techniques.
15. Explain conversion algorithm for infix expression to postfix expression with an example.
16. Elaborate the limitations of linear queues.
17. Write a program or algorithm to implement a linked list.
18. Write a program or algorithm to insert a new node at the beginning of a linked list.
19. Explain extended binary tree with an example.
20. Describe the method for postorder traversal with a diagram.
21. What are inverted files? Explain structure of inverted file with an example.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain searching tecniques in detail.
23. Differentiate between double ended queue and priority queue. Explain their operational procedures in detail.
24. Explain the concept of tree searching. Explain about binary search tree and its creation.
25. What is hashing? Explain in detail about hash table and hashing function.

(2×15=30)