22100730

B.Sc /BCA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, APRIL 2022

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

EA742508

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define linked list.

2. How many number of elements are in array A[-1 : 25] ?

3. Define stacks.

4. Define circular queues.

5. What are the advantages and disadvantages of a Singly linked list?

6. What is a doubly linked list?

7. What do you mean by linked stack and linked queue?

8. What you meant by depth of a tree ?

9. What is complete binary tree?

10. What are the two approaches to implement indexes in indexed sequential files?

11. What is linked file organization?

12. What is hash table?

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Discuss the difference between sparse matrix and normal matrix.

14. Compare and contrast linear search and binary search techniques.

15. Define queues and explain different types of queues?

16. Describe the operations performed on double ended queues?

17. Briefly explain linked list.Explain the different operations performed on a linked list.

18. Explain garbage collection.

19. What are binary trees? Describe different types of binary trees?

20. Create a binary search tree using given elements through step by step procedure :
    10,12,5,4,20,8,7,15,13

21. Define the following terminologies with examples :
    a)Field b)Record c)File d)Index

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Discuss insertion sort algorithm. Use insertion sort mechanism to sort the list:
    25,15,30,9,99,20,26

23. What you meant by subprograms calls and execution?

24. Explain Binary tree traversals with examples and it's traversed diagrams.

25. How collision is occurred? Explain collision resolving methods used for hashing?

(2×15=30)