Reg. No. : ....

Name : ....

III Semester B.C.A. Degree CBCSS (OBE) Reg./Sup./Imp.
Examination November 2021
(2019-2020 Admission)
General Awareness Course
3A12BCA : DATA STRUCTURES

Time : 3 Hours   Max. Marks : 40

PART – A
Short Answer

Answer **all** questions.   (6×1=6)

1. What do you mean by Data Structure ?

2. What is Recursion ?

3. What is time complexity of a binary search ?

4. What is merge sort ?

5. Name the operations used in stack.
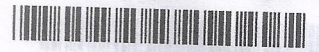
6. Define circular linked list.

PART – B
Short Essay

Answer **any 6** questions.   (6×2=12)

7. Define Sparse matrix.

8. Explain selection sort.

9. What is the advantage of Doubly linked list ?

10. Explain Huffman code.

11. What is linked list ?

12. How to insert an element into a linked list ?

13. Write down the algorithm for Post-order traversal.

14. Define Binary Tree.

PART – C
Essay

Answer **any 4** questions.

(4×3=12)

15. Write down the algorithm for Tower of Hanoi.

16. How to represent array in memory ? What are the operations of an array ?

17. Write down the algorithm for quick sort.

18. Differentiate linear search and binary search.

19. Convert the following expression to postfix and prefix : P / Q + R – S * T / U.

20. Write down the algorithm for search an element from a sorted linked list.

PART – D
Long Essay

Answer **any 2** questions.

(2×5=10)

21. Explain the linked list operations.

22. Write an algorithm for conversion of infix to postfix expression. Explain.

23. Write down the memory representation of binary tree and binary search tree.

24. Define the following :
    a) Queue
    b) Deque
    c) Priority Queue.

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