

Reg. No. :

Name :

III Semester B.Sc. Degree (CBCSS-Sup./Imp.) Examination, November 2020
(2014 – '18 Admns.)

CORE COURSE IN COMPUTER SCIENCE
3B04CSC : Data Structure

Time : 3 Hours

Max. Marks : 40

SECTION – A

1. **One** word answer.**(8×0.5=4)**

- Adding new record to a data structure is called
- Complexity of binary search algorithm is
- Write the complexity of bubble sort.
- Arranging records in some logical order is called
- A _____ is a list of elements in which an element may be inserted or deleted only at one end.
- _____ is the term used to insert an element in a stack.
- The polish notation of $(A + B) * C$ is
- In Queue deletion takes place in only one end called

SECTION – B

Write short notes on **any seven** of the following questions.**(7×2=14)**

- Define data structure.
- Write a program to find factorial using recursion.
- What is searching ?
- Define Stack.
- Define a Binary Tree.
- What is the idea behind merge sort ?
- What is a circular linked list ?



9. Define singly linked list.
10. Write about binary tree representation.
11. What is big O notation ?

SECTION – C

(4×3=12)

Answer **any four** of the following questions.

12. Distinguish between Stack and Queue.
13. Write the recursive algorithm for Tower of Hanoi problem.
14. Explain the steps required to evaluate the postfix expression.
15. State the algorithm to create a linked list.
16. Write the steps for sorting the following numbers (12, 9, 4, 99, 120, 1, 3, 10) using bubble sort.
17. Define level, degree, root and depth of a tree.

SECTION – D

Write an essay on **any two** of the following questions.

(2×5=10)

18. Describe linear and binary search with algorithm and suitable example.
 19. Write the algorithm for any two linked list operations.
 20. Explain tree traversal with algorithm.
 21. Write about dequeue and its operations.
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