



0170524

K19U 2506

Reg. No. :

Name :

III Semester B.C.A Degree (CBCSS-Reg./Sup./Imp.)

Examination, November - 2019

(2014 Admn. Onwards)

GENERAL COURSE

3A12 BCA : DATA STRUCTURE

Time : 3 Hours

Max. Marks : 40

Section - A

1. One Word answer.

(8×½=4)

- The notation _____ is the formal way to express the upper bound of an algorithm's running time.
- Merge Sort algorithm follows _____ programming approach.
- _____ is used to get the top data element of the stack, without removing it.
- _____ notation is known as Reversed Polish Notation.
- Binary search is a fast search algorithm with run-time complexity of _____
- _____ method remove (access) an item from the queue.
- In _____ last item contains link of the first element as next and the first element has a link to the last element as previous.
- _____ is a process to visit all the nodes of a tree.

Section - BWrite short notes on any **seven** of the following questions.

(7×2=14)

- Differentiate best and worst cases.
- Represent sparse matrix using array.
- What is the time complexity of merge sort?
- Explain the methodology of quick sort.

P.T.O.



6. What is postfix expression?
7. What are the limitations of array implementations?
8. Write algorithm to reverse a linked list.
9. What is complete binary tree?
10. Write algorithm for inorder traversal.
11. Explain addition of sparse matrices.

Section - C

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

(4×3=12)

12. Explain Tower of Hanoi Problem.
13. Write the program for Binary Search.
14. Write an algorithm to search a node in linked list.
15. Explain the implementations of stack operations using Linked list.
16. Explain the linked representation of a Binary tree.
17. Convert $((A+B)-C*(D/E))+F$ to postfix.

Section - D

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

(2×5=10)

18. Write a program to convert a infix form to prefix form.
 19. Short note on:
 - a) Priority Queue
 - b) Dequeue
 - c) Postfix Expression Evaluation:
 20. Compare different sorting algorithms.
 21. What is Binary Search Tree? Explain its operations.
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