



0170764

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)

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

2. Differentiate best and worst cases.
3. Represent sparse matrix using array.
4. What is the time complexity of merge sort?
5. 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 an 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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