Reg. No. : ....

Name : ....

III Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.) Examination, November 2018
(2014 Admn. Onwards)
Core Course in Computer Science
3B04CSC : DATA STRUCTURE

Time : 3 Hours

Max. Marks : 40

SECTION – A

1. **One** word answer. (8×0.5=4)

   a) BST stands for

   b) In _____ expression, operators succeed operands.

   c) The operation of inserting element into a stack is called

   d) The data structure in which elements doesn't have any order is called

   e) The insertion in a queue takes place at _____ end.

   f) A special node which has no parent node is called

   g) A matrix with most of the elements are zero is called

   h) Procedure that calls itself is called

SECTION – B

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

2. What is garbage collection ?

3. Briefly explain the basic operations on stack.

4. Differentiate complete and full binary tree.

5. Briefly explain any two applications of arrays.

6. Write a short note on priority queue.

7. What is meant by Big Oh (O) notation ?

8. What are recursive algorithms ?

9. How to represent 2D array in memory ?

10. What is apriori analysis ?

11. Briefly explain about linear search.

SECTION – C

Answer **any four** of the following questions. (4×3=12)

12. What are the advantages of circular linked list ?

13. Briefly explain the applications of stack.

14. Write an algorithm for bubble sort.

15. Write an algorithm to insert an element into circular queue.

16. Evaluate the postfix expression : 5, 7, 1, +, *, 2, 4, /, --

17. Explain binary search in detail.

SECTION – D

Write an essay on **any two** of the following questions. (2×5=10)

18. What is doubly linked list ? Explain various operations on doubly linked list.

19. Explain merge sort in detail.

20. Write a program to implement queue using array.

21. Compare insertion sort and selection sort algorithms with examples.

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