Roll No. | | | | | | | | | | | | | **Total No. of Pages :02**

Total No. of Questions : 18

B.Tech. (CSE)/(IT) (2012 to 2017)

(Sem.–3)

DATA STRUCTURES

Subject Code : BTCS-304

M.Code : 56594

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

Answer briefly :

1. Write a short note on pointers.

2. Define Big O notation.

3. Discuss applications of Linked Lists.

4. List types of operators.

5. Define priority queue.

6. Discuss AVL trees.

7. What is adjacency List?

8. Write a short note on rehashing.

9. What are advantages of selection sort?

10. What are recursive procedures?

SECTION-B

11. Write the advantage and disadvantage of Array and Link List data structures.

12. What is algorithm complexity? How it is measured?

13. Write an algorithm to convert infix expression to postfix expression by taking a suitable example.

14. Compare direct address tables with hash tables.

15. Illustrate the concept of depth-first search traversing of graph.

SECTION-C

16. What is Hash function? How linear probing is used to resolve collision in Hash Tables?

17. Explain various methods in which a binary tree can be represented. Write **any one** in detail with example.

18. Write an algorithm to sort an array of integers in the descending order using bubble sort.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.