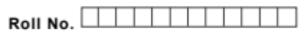


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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (IT) (2018 Batch) (Sem.-3) DATA STRUCTURE & ALGORITHMS Subject Code : BTIT-301-18 M.Code : 76391

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

Write briefly :

- 1. How the AVL trees are different Binary trees?
- 2. Write briefly about working principle of Priority Queue.
- 3. How do space complexity affect performance of a program?
- Define Data Structure.
- 5. Write name of Best Sorting Algorithm. What are its time and space complexities?
- 6. What are applications of Graphs?
- 7. Write down the necessary condition for a tree to become binary search tree.
- 8. Define Hashing.
- 9. What do you understand by shortest path in a graph?
- 10. List various types of linked lists and define advantage of using linked list.

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SECTION-B

- What are various operations applicable for graphs? Discuss.
- 12. What is the role of data structures in computer science? Discuss different mathematical notations and time space tradeoff of data structures.
- 13. Elaborate following :
 - Enqueue and Dequeue operations.
 - b) Circular and doubly link list.
- 14. What are the various steps involved in insertion sort? Explain with example.
- 15. What is the benefit of using AVL Trees as data structure?

SECTION-C

- 16. What are the applications of Stack? Discuss different stack operations. Elaborate by evaluating any sample postfix expression using stack.
- 17. How binary search trees are helpful in information searching in comparison to other data ree agorithm. Ex Chanket C structures? How they are different from AVL Trees?
- 18. Compare selection sort and quick sort algorithm. Explain their working.

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.



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