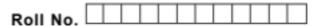


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Total No. of Pages : 02

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B.Tech.(Electronics & Computer Engg.) (2011 Onwards) (Sem.-4) DATA STRUCTURES Subject Code : BTCS-304

M.Code : 62020

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 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

## 1. Answer briefly :

- a) How pointers are used to store memory address?
- b) What is memory leak in data structure?
- c) What are the advantages of Linked List over arrays?
- d) What is the complexity of an algorithm in data structure?
- e) What are uses of B trees?
- f) What is AVL tree, explain with example?
- g) Give some applications of Trees.
- h) Define a cycle in a graph.
- i) What is double hashing?
- j) Give the syntax of binary search.

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## SECTION-B

- Q2 What is sparse matrix with example? How it is represented?
- Q3 What are the tree traversal techniques? Explain each with an example.
- Q4 What are Circular Queue and Priority Queue? Write an algorithm to insert and delete an element from a Circular Queue.
- Q5 What are the tasks performed during postorder traversal?
- Q6 Give the main property of a heap that is implemented as an array.

## SECTION-C

- Q7 a) Write an algorithm to implement the stack using Link List.
  - b) What is hashing? Discuss its types.
- Q8 What is meant by traversing an array? Write an algorithm to insert an element at the specific position in an array.
- Q9 Which sorting algorithm is best for small input data? Give the syntax by taking an example set. Compute the complexity of that algorithm.

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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