

**B. TECH. SEM - III (INF. TECH.) (2014 COURSE) (CBCS) :
WINTER - 2017**

SUBJECT: DATA STRUCTURES & FILES

Day: **Friday**
Date: **19/01/2018**

W-2017-2044

Time: **10.00 AM TO 01.00 PM**
Max. Marks: **60**

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat labelled diagrams **WHEREVER** necessary.
- 4) Assume suitable data if necessary.

Q.1 What are the types of Data structure? Explain each with an example. **(10)**

OR

Q.1 Explain the relation between Data Structures and Algorithm in the process of problem solving with suitable example. **(10)**

Q.2 Explain the concept of multi-stack. What are different ways of implementing multi-stack? **(10)**

OR

Q.2 What is circular queue? Write pseudocode for insertion in circular queue. **(10)**

Q.3 How linked organization is better compare to sequential organization? Explain with suitable example. **(10)**

OR

Q.3 Explain any one application of linked list with example. **(10)**

Q.4 Write an algorithm to construct a Binary Search Tree. **(10)**

OR

Q.4 Write a note on AVL tree and its rotation with suitable example. **(10)**

Q.5 Explain recursive algorithm for Binary search using array. **(10)**

OR

Q.5 What is selection sort?
Step by step sort the following data using selection sort in ascending order.
5, 10, -1, 0, 1, 4, 2, 6, 7, 3. **(10)**

Q.6 Why collision happens in hashing? Explain different techniques to resolve collision. **(10)**

OR

Q.6 Explain any two file organization techniques with suitable examples. **(10)**

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