

S.D.E.

M.C.A. SEM -II : WINTER - 2017
SUBJECT : DATA STRUCTURES

Day : **Tuesday**
Date : **12/12/2017**

Time : **02.00 P.M. TO 05.00 P.M.**

Max. Marks : 80

W-2017-4417

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – I and attempt **ANY TWO** questions from Section – II.
 - 2) Answers to both the sections should be written in **SEPARATE** answer books.
 - 3) Figures to the right indicate **FULL** marks.
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SECTION – I

- Q.1** What is doubly linked list? Explain in detail. [10]
- Q.2** Define complete binary tree, strictly binary tree and almost complete binary tree. [10]
- Q.3** What is bubble sort? Write an algorithm for it. [10]
- Q.4** What is searching? List and explain any two searching techniques. [10]
- Q.5** Explain time complexity. [10]
- Q.6** What is AVL tree? Explain rebalancing techniques. [10]
- Q.7** Write short note on **ANY TWO** of the following: [10]
- a) Stack
 - b) Queue
 - c) ADT

SECTION – II

- Q.8** Write an algorithm to sort a list of numbers using merge sort. [15]
- Q.9** Construct a binary tree from the following preorder and in-order traversal sequence: [15]
Pre-order : ABCDEF
In-order : CBAEDF
- Q.10** Write a program for array implementation of stack. [15]

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