

**M.C.A. SEM - IV (CHOICE BASED CREDIT SYSTEM 2011 &
2012 COURSE) : SUMMER - 2018
SUBJECT : APPLIED DATA STRUCTURES**

Day : **Friday** Time : **10.00 AM TO 01.00 PM**
Date : **27/04/2018** Max. Marks : 100
S-2018-1797

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – I and **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.

SECTION – I

- Q.1** Define ADT. Explain stack as ADT. [15]
- Q.2** Discuss working of queue. Explain different types of queues. [15]
- Q.3** Define rational number as ADT and implement it using any language. [15]
- Q.4** Define binary tree. Illustrate working of Depth first and Breadth first traversing of binary tree. [15]
- Q.5** Define 2-D array. Explain its representation in memory. Further suggest an appropriate data structure to represent sparse matrix. [15]
- Q.6** Write note on **ANY THREE** of the following: [15]
- a) AVL tree
 - b) Recursion: an application of stack
 - c) Hash table
 - d) Heap sort
 - e) Dynamic memory allocation

SECTION – II

- Q.7** Implement doubly linked list to add two-variable polynomials and display resultant polynomial. [20]
- Q.8** Write a program for selection sort and trace it to sort following list in ascending order. [20]
08, 25, 12, 48, 35, 67, 85, 52.
- Q.9** Write a program to construct a binary search tree. [20]

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