

(DMCA104)

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M.C.A. DEGREE EXAMINATION, MAY – 2018**First Year****Data Structures****Time : 3 Hours****Maximum Marks :70****SECTION - A****Answer any three questions. (3 x 15 = 45)**

- Q1)** Explain about abstract data model and various data structure operations.
- Q2)** Illustrate different pattern matching algorithms with suitable example.
- Q3)** How to represent linked list in computer memory? Write a procedure to insert an element into and delete an element from single linked list with suitable example.
- Q4)** Explain about threaded binary tree and binary search tree operations with example.
- Q5)** The following values are to be stored in hash table: 25, 42, 96, 101, 102, 162, 197. Describe how the values are hashed by using division method of hashing with table size of 7.

SECTION - B**Answer any five questions. (5 x 4 = 20)**

- Q6)** Briefly explain about big O notation and Omega Ω notations of algorithm.
- Q7)** What is record? Describe the record storage in compute memory.
- Q8)** Explain any four string handling functions with proper example.
- Q9)** What is recursion? How the recursion is implemented through stack?
- Q10)** Write pseudo code to implement queue operations.
- Q11)** What is AVL tree? Explain L-L and R-L, rotations in AVL trees with example.
- Q12)** Explain about deletion and insertion operations in B – trees.
- Q13)** Explain about insertion sort algorithm with example.

SECTION - C

Answer all of the following questions. (5 x 1 = 5)

Q14) Define time complexity.

Q15) What is pointer?

Q16) Define circular queue.

Q17) Define heap condition.

Q18) Define hashing.



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