

B.C.A. (2010 Course Sem- VI : SUMMER - 2019

SUBJECT: DATA STRUCTURES

Day : Monday
Date : 22/04/2019

S-2019-2110

Time: 10.00 AM TO 01.00 PM
Max. Marks: 70.

N.B.:

- 1) Q.1 is **COMPULSORY**.
 - 2) Attempt any **FOUR** questions from **Q.2 to Q.7**.
 - 3) Figures to the **RIGHT** indicate full marks.
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Q.1 What is Data Structure? Explain types of data structure in detail. **[14]**

Q.2 Write binary search algorithm and calculate the time complexity of Binary Search Algorithm. **[14]**

Q.3 Write a program to delete a node from linked list. **[14]**

Q.4 Write Short note (**ANY TWO**) **[14]**

- a) Abstract Data Type
- b) Binary search algorithm
- c) Quick sort algorithm

Q.5 Write the following C function for linked stack **[14]**
createstack(), clearstack(), stackfull(), stacknull(), popnode().

Q.6 Write a C program for sorting the list of Integer using Quick Sort algorithm, obtain the worst case and average case time complexity of the algorithm. Show the trace of the algorithm for the following key sequence **[14]**
62,22,36,6,79,26,75,13,31,76.

Q.7 Write a program to read an Integer array and perform linear search. **[14]**

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