

S-259

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**B. Sc. (Second Semester)
EXAMINATION, 2019**

**COMPUTER SCIENCE
(Data Structure and File Processing)**

(SOS/C. SJC-002)

Time : Two Hours] [Maximum Marks : 70

Note : (i) Attempt any *five* questions from Section A and any *three* questions from Section B.

(ii) Answer each question of Section A within 50 words.

(iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided for use.

Section—A

Note : Attempt any *five* questions. Each question carries 5 marks.

1. Write algorithm of Breadth first search technique.

(A-36) P. T. O.

2. Compare linked list and linear array representations of a data structures.
3. What do you mean by efficiency of an algorithm ? Explain average case complexity.
4. How are stacks useful in expression evaluation ?
5. What is Hashing ? What is its advantage ?
6. Why is bubble sort algorithm so called ?
7. Define Abstract data type.

Section—B

Note : Attempt any *three* questions. Each question carries 15 marks.

1. Explain any *two* of the following :
 - (a) Applications of trees
 - (b) Sequential search
 - (c) Any *two* string operations
2. Write a program to implement queue through linked list. Write any *four* applications of queue. Is a queue linear or non-linear data structure ?
3. (a) Write a C function to delete an element from the root of binary search tree.

(A-36)

(b) Can a binary tree be uniquely reconstructed given its pre-order and post-order traversals ? Justify your answer.

4. (a) What do you mean by Sequential File Organisation ? Explain. Discuss its pros and cons.

(b) Describe heap file organisation.

5. Write short notes on the following :

(a) Hash function

(b) Collision Resolution

6. Write algorithms to insert into and delete elements from doubly linked list.

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