

Dream Class [DC-3702]

Second Year B.C.A (SEM.3) Examination

Nov/Dec-2018

Data Structures

Time: 3 Hours]

[Total Marks: 70

- 1** Answer in short.(any-7) (14)
- (1) Explain Priority Queue?
 - (2) Application of stack?
 - (3) What is Simple, Strict and complete binary tree?
 - (4) What is Self referential structure?
 - (5) What is Advantages of quick sort?
 - (6) Justify Link list is dynamic linked list?
 - (7) What is Web Browser and give it example.
 - (8) Give the polynomial representation of $2x^2+3xy+y^2+z$?
 - (9) Difference between singly linked list and doubly linked list?
 - (10) Linear and non linear data structure?
 - (11) Define graph with example.
 - (12) What is siblings and forest in tree?

- 2** Explain Following Question in Details. (Any-Two) (14)

- (1) What do you mean by data structure? Explain Stack with real World example and write down algorithm infix to prefix?
- (2) What is queue? Difference between simple and circular queue? How to insert an element in circular queue?
- (3) What is Recursion type of recursion and Explain Dynamic memory Allocation and static memory allocation?

3 Explain Following Question in Details. (Any-Two) (14)

- (1) What is searching? Difference between binary search and Linear search? Write down algorithm of binary search
- (2) What is sorting? Explain Selection sort?
- (3) What is difference between Singly Linked list and double linked List? Write an algorithm to perform insert at particular node and delete at particular node and display it singly linked list?

4 Explain Following Question in Details. (Any- **Two**) (14)

- (1) Explain AVL and 2-3 tree in details?
- (2) Describe the traversal option of binary tree?
- (3) Explain Insertion Sort with an algorithm?

5 Explain Following Question in Details. (Any-Two) (14)

- (1) Explain Tower of Hanoi and simulation?
- (2) Explain 2-way merger sort with an example?
- (3) What is stack? Explain various operation of stack?
- (4) Construct tree:-(Show every step)

Inorder : - - + / 8 4 6 * 2 - 9 8

Preorder: - 8 / 4 + 6 - 2 * 9 - 8

