



RAO-003-1032001

Seat No. _____

B. C. A. (Sem. II) (CBCS) (W.E.F.-2016) Examination

March/April – 2019

CS-07 : Data Structure Using C Language

Faculty Code : 003

Subject Code : 1032001

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 (a) Objective type questions : 4
- (1) A function used to de-allocate memory is _____.
 - (2) Which keyword is used for structure ?
 - (3) Write two main measures for the efficiency of an algorithm.
 - (4) _____ efficiency estimates depend on what we define to be a step.
- (b) Answer in brief : (any 1 out of 2) 2
- (1) Write features of algorithm.
 - (2) Difference between Structure and Union.
- (c) Answer in brief : (any 1 out of 2) 3
- (1) Explain Big-Oh notation.
 - (2) Explain Pointer with advantages.
- (d) Answer in brief : (any 1 out of 2) 5
- (1) Explain Storage class.
 - (2) Explain memory allocation function.
- 2 (a) Objective type questions : 4
- (1) A graph is data structure consist of _____ set of nodes.
 - (2) Full from of BFS.
 - (3) Which sorting technique is also known as Bin Sort ?
 - (4) The total number of comparisons in a bubble sort is _____.

- (b) Answer in brief : (any 1 out of 2) 2
 (1) What is DFS ?
 (2) What is Shortest Path problem ?
- (c) Answer in brief : (any 1 out of 2) 3
 (1) Explain minimal spanning tree.
 (2) Explain Bucket sort.
- (d) Answer in brief : (any 1 out of 2) 5
 (1) What is sorting ? Explain selection sort with example.
 (2) What is searching ? Explain Binary Search with example.
- 3 (a) Objective type questions : 4
 (1) How many types of double ended queue are available ?
 (2) Stack is _____ kind of data structure.
 (3) In queue elements are inserted from _____ end.
 (4) What is homogeneous data types ?
- (b) Answer in brief : (any 1 out of 2) 2
 (1) What is Deque ?
 (2) What is Priority queue ?
- (c) Answer in brief : (any 1 out of 2) 3
 (1) Write insert and delete algorithm for Circular Queue.
 (2) Write algorithm for push and pop for stack.
- (d) Answer in brief : (any 1 out of 2) 5
 (1) Explain Data structure organization.
 (2) Write a program for queue using static array.
- 4 (a) Objective type questions : 4
 (1) Linked list is a data structure consisting a group of _____.
 (2) A single linked list can travers in _____.
 (3) The situation when in a linked list START=NULL is _____.
 (4) Value of the first linked list index is _____.

- (b) Answer in brief : (any 1 out of 2) 2
 (1) Write application of linked list.
 (2) What is the meaning of concatenation of linked list ?
- (c) Answer in brief : (any 1 out of 2) 3
 (1) Explain types of linked list with advantage.
 (2) Difference between singly linked list and doubly linked list.
- (d) Answer in brief : (any 1 out of 2) 5
 (1) Write a menu driven singly linked list program in C which perform the entire linked list operations.
 (2) Write a menu driven doubly linked list program in C which perform the entire linked list operations.
- 5 (a) Objective type questions : 4
 (1) The nodes with no successor are called _____.
 (2) In which type of traversal root node is first visited ?
 (3) Root has _____ parent node.
 (4) What is the maximum possible number of nodes in a binary tree at level 6 ?
- (b) Answer in brief : (any 1 out of 2) 2
 (1) Write properties of binary tree.
 (2) Difference for sequential representation using array V/s. Linked list representation.
- (c) Answer in brief : (any 1 out of 2) 3
 (1) Explain height balance tree.
 (2) Explain the basic terminologies of a binary tree.
- (d) Answer in brief : (any 1 out of 2) 5
 (1) Explain traversals of Binary Tree.
 (2) Explain BST with its operations.
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