Seat No. : _____

JG-125

January-2021

B.C.A., Sem.-III

CC-202 : Data Structures

Time : 2 Hours] **[Max. Marks : 50**

Instructions : (1) All Questions in **Section – I** carry equal marks.
(2) Attempt any **TWO** questions in **Section – I**.
(3) Question **5** in **Section – II** is **COMPULSORY**.

Section – I

1. (A) What is data structure ? Explain its classification in detail. **10**

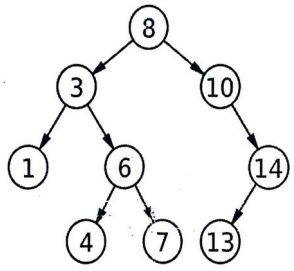
   (B) What is linked list ? Explain its types with example. **10**

2. (A) What is stack ? Explain notations of stack. Convert following infix expression into postfix. **10**
   (A+B*C) – D + (E*F/G)*H

   (B) What is Queue ? Explain types of queue with example. **10**

3. (A) Define AVL tree. List and explain its types with rotations. **10**

   (B) Explain in-order, pre-order, post-order traversal of a binary tree. Give in-order, pre-order, post-order for the given binary tree. **10**



4. (A) What is graph ? Explain graph representation methods with example. **10**

   (B) Explain prim's algorithm with example. **10**

Section – II

5. Answer any **five** from following : (**5 × 2** marks each) **10**

(1) _____ data structure has fixed size,

(a) Array (b) Linked List

(c) Tree (d) Graph

(2) A line in a grocery store represents _____.

(a) Array (b) Queue

(c) Stack (d) Linked list

(3) Stack is also known as _____.

(a) FILO (b) FIFO

(c) LIFO (d) LILO

(4) The sequence for pre-order traversal is

(a) Root-Left-Right (b) Left-Root-Right

(c) Left-Right-Root (d) Right-Left-Root

(5) _____ algorithm is an example of greedy algorithm.

(a) Prim's (b) Dijkstra's

(c) Kruskal's (d) None of these

(6) The term optimal means _____.

(a) Shortest (b) Fastest

(c) Cheapest (d) All of these

(7) In a _____, all the leaf nodes are at the same level.

(a) B-Tree (b) BST

(c) Heap Tree (d) Threaded Binary Tree

(8) A graph with multiple edges or loop is called a

(a) Loop (b) Cycle

(c) Multi graph (d) None of these

(9) _____ term defines sorting two sub arrays recursively in a merge sort.

(a) Divide (b) Conquer

(c) Combine (d) All of these

(10) Which of the following is application of stack ?

(a) Reversing of string.

(b) Conversion of infix to postfix.

(c) Conversion of postfix into infix.

(d) All of these

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