B.C.A. Semester-III (Honours) Examination, 2022-23

BACHELOR OF COMPUTER APPLICATION

Course ID : 33313 **Course Code : BCA-CC-07**

Course Title : Data structure through C++

Time : 2 Hours Full Marks : 50

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer **all** the questions from the following: 1×10=10

i) Which of the following is an application of stack data structure?

a) Managing function calls

b) The stock span problem

c) Arithmetic expression evaluation

d) All of these

e) None of these

ii) Which of the following sorting algorithm can be used to sort a random link list with minimum time complexity?

a) Insertion sort

b) Merge sort

c) Heap Sort

d) All of these

e) None of these

iii) Which of the following is true about linked list implementation of stack?

a) In push operation, if new nodes are inserted at beginning of linked list, then in pop operation nodes must be removed from end.

b) In push operation, if new nodes are inserted at the end then in pop operation node must be removed from beginning.

c) Either of the above

d) All of the above

e) None of these

iv) Which of the following is a linear data structure?

a) Array

b) AVL Tree

c) Binary Tree

d) Grapes

e) None of these

f) Write the Postifix from each of the following infix expressions:

i) A-B+(M$N)*(O+P)-Q/R^S*T+Z

ii) K+L-M*N+(O^P)*W/U/V*T+Q

GROUP-D

4. Answer any **one** from the following: 10×1=10

a) Write a program to implement linear linked list, showing all the operations that can be performed on a linked list. 10

b) Short note (any **two**): 5×2=10

i) Stack

ii) B+ Tree

iii) BFS and DFS

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