

**Professional Course Examination (Odd), 2023**

**( 3rd Semester )**

**BACHELOR OF COMPUTER APPLICATIONS**

**Course No. : BCA/3/CC/18**

**( Data Structure using C Lab )**

**( Practical )**

**Full Marks : 75**

**Time : 3 hours**

*The figures in the margin indicate full marks for the questions*

**SECTION—A**

**( Marks : 30 )**

**I. Answer any two from the following :**

**15×2=30**

1. Search an element on a given list of integers using tower of Hanoi using recursive function.
2. Write a C program to implement binary search.
3. Write a C program using selection sort.
4. Write a C program using bubble sort.

**SECTION—B**

( Marks : 20 )

20.

**II. Answer any one from the following :**

1. Write a C program to simulate the working of a queue of integers using an array. Provide the following operations :

- (a) Insert
- (b) Delete
- (c) Display

2. Write a C program using dynamic variables and pointers to construct a stack of integer using linked list and to perform the following operations :

- (a) Push
- (b) Pop
- (c) Display

The program should print appropriate messages for stack overflow, stack underflow and stack empty.

3. Write a C program to construct circular linked list :

- (a) Insert
- (b) Delete
- (c) Display

**SECTION—C**

( Marks : 25 )

**III. Viva voce.**

15

**IV. Practical record book.**

10

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