



DCCA – 201

II Semester B.C.A. Degree Examination, August/September 2023

(NEP – Freshers and Repeaters)

COMPUTER APPLICATION

CAC 04 : Data Structures Using C

Time : 2½ Hours

Max. Marks : 60

**Instruction** : Answer *all* the Sections.

SECTION – A

I. Answer **any 6** questions. **Each** question carries **2** marks. (6×2=12)

- 1) What is Non-Linear Data Structure ?
- 2) Write any two memory allocation functions.
- 3) What are two dimensional arrays ?
- 4) What is traversing ?
- 5) What is circular linked list ?
- 6) What is Garbage Collection ?
- 7) Write any two applications of Queues.
- 8) Evaluate the following postfix expression using stack : 5 7 3 \* +
- 9) What do you mean by Complete Binary Tree ?

SECTION – B

II. Answer **any 4** questions. **Each** question carries **6** marks. (4×6=24)

- 10) Write a note on Performance Measurements.
- 11) Write a C program to find the GCD of given two integers using Recursion.
- 12) Write an algorithm and explain the Selection Sort.
- 13) Explain transforming infix expression to postfix expression with example.
- 14) Write a note on :
  - a) Priority Queue. 3
  - b) Circular Queue. 3
- 15) Explain Preorder Tree Traversal with examples.

P.T.O.



SECTION – C

III. Answer **any 3** questions. **Each** question carries **8** marks. (3×8=24)

16) Write an algorithm and explain the Bubble Sort.

17) Explain Tower of Hanoi with example.

18) Explain the following :

a) Singly Linked List.

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b) Doubly Linked List.

4

19) Write an algorithm for Insertion and Deletion operations on Queue using array representation.

20) Explain Inorder and Postorder traversals with example.



(4×8=24)