Code No. D-0452

FACULTY OF INFORMATICS

M.C.A. (Non-CBCS) I-Year II-Semester (Backlog) Examination, April 2022
Subject: C++ Data Structures

Time: 3 Hours **Max. Marks: 80**

(Missing data, if any, may be suitably assumed)

Note: Answer any five questions from the following.
All questions carry equal marks.

1. a) What are the advantages of OOPs? Explain it
   b) Write a program to demonstrate inline functions

2. a) Explain the concept of recursion
   b) Write a program to perform matrix addition

3. a) Create a class for representing employees
   b) What is a constructor? Give an example program

4. a) Write a program to demonstrate the destructor
   b) Write notes on dynamic arrays

5. a) Write a program to overload addition operator
   b) Describe the notion of inheritance

6. a) Write a program to demonstrate virtual function
   b) What is polymorphism? Explain it with an example

7. a) Write a program to implement a stack using linked representation
   b) Explain the concept of hashing

8. a) Write a program to implement a queue using array representation
   b) Explain the applications of stack

9. a) Create a binary tree for the following sequence of numbers :
      50, 10, 60, 30, 20, 40, 80, 70, 100
   b) Explain how to represent graph using adjacency matrix

10. a) Perform the RR and RL operations on any AVL tree
    b) Write notes on B-Trees

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