



SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

WINTER SEMESTER 2023-24

CONTINUOUS ASSESSMENT TEST – II

SLOT: G2+TG2

Programme Name & Branch: B.Tech Business System

Course Name & Code: Object Oriented Programming and CBS1002

Class Number (s): VL2023240503578, VL2023240503576

Faculty Name (s): Dr. J. SAIRA BANU, RENITA R

Exam Duration: 90 Mins.

Maximum Marks: 50

Q.No.	Question
1.	Create a base class named Plant with the following protected attributes: name, color, and taste. The Plant class should have a constructor that initializes these attributes and a method display() to print the plant's details. Derive a class named Edible from the Plant class. This class represents plants that are edible. Add a protected attribute to indicate if the plant is edible. Include a constructor that takes the necessary parameters for initialization and a method displayEdible() to print whether the plant is edible. Derive a class named Visual from the Plant class. This class represents plants that are visually appealing. Add a protected attribute to indicate if the plant is visually appealing. Add a method displayVisual() to print whether the plant is visually appealing. Derive a class named Vegetable from both Edible and Visual classes. This class represents vegetables that are both edible and visually appealing. The Vegetable class should override the display() method to include information about both its edibility and visual appeal. Prompt the user to enter details for a vegetable (name, color, taste, edible, visually appealing), create an object of the Vegetable class with these details, and then display these details using the overridden display() method. [10 M]
2.	Create two classes DM and DB. DM stores the distance in meters and centimetres and DB Stores the distance in feet and inches. Write a program to read the values for the class objects and add one object DM with another object DB. Use a friend function to carry out addition operation. The resultant object is stored in DM and display it. Note: 1 feet = 30 centimetres, 1 inch =2.54 centimetres. [10 M]
3.	Design a program to manage student records dynamically. Each student record consists of a

	student ID and a student name. Implement a class StudentDatabase that dynamically manages an array of student records. Provide member functions to add a new record and display. [10 M]
4.	a. Justify the statement when a derived class is instantiated, memory is allocated to all data members of both the base and derived class. [3 M] b. State the importance of a static variable and Fix the error in the following code. [7 M] <pre> Class Example { Public: Static int count; Int num; Example() { Count++; Num=0; } Static void printCount() { Cout<<"Count:"<<count<<endl; } }; Int count=0; Int main() { Example ex1; Example ex2; Example ex3; Ex1.num=1; Ex2.num=2; Ex3.num=3; Cout<<"ex1.num:"<<ex1.num<<endl; Cout<<"ex2.num:"<<ex2.num<<endl; Cout<<"ex3.num:"<<ex3.num<<endl; Example.printCount(); Return 0; } </pre>
5.	a. Distinguish between early binding and late binding in C++ with an example program. [3 M] b. Write a c++ program to search an element in an array using function pointers. [7 M]