**KLS Gogte Institute of Technology**

**Department of Computer Science and Engineering**

**Subject: Object Oriented Programming Using C++ Code: 18ACS28**

**Open Book Assignment - II**

**Semester : II Issue Date : 11/09/2021**

**Units covered:**

**Unit 3: Constructors, Destructors and Operator overloading**

**Unit 4: Inheritance (Derived Classes, Single, multilevel, multiple inheritance)**

**Instructions:**

Attempt one question from each part. Each part is for 05 (five) marks.

**PART - A**

1. A book shop maintains the inventory of books being sold at the shop. The list includes details such as author, title, price, publisher and number of copies available. Whenever a customer wants a book, the sales person inputs the title and author and the system searches the list and displays whether it is available or not. If it is not, an appropriate message is displayed. If it is, then the system displays the book details and requests for the number of copies required. If the requested copies are available, the total cost of the requested copies is displayed; otherwise the message “Required copies not in stock” is displayed. Develop the required class specification with the required data members, constructors and member functions.
2. Design a class Distance having data members viz., feet and inches. Include suitable constructors to initialize a Distance object. Develop member function to display a Distance object and operator function to overload == operator to compare two distance objects.

**PART - B**

1. Develop a C++ program to implement the following class hierarchy.

Player

Name

numMatches

displayInfo()

Batsman

totalScore

perMatchScore[]

average

calcAverage()

displayInfo()

Bowler

numWickets

perMatchWickets[]

Count5WicketHauls()

displayInfo()

1. Assume that a bank maintains two kinds of accounts for customers, one called as savings account and the other as current account. The savings account provides compound interest and withdrawal facilities but no check balance facility. The current account provides check balance facility but no interest. Current account holders should also maintain a minimum balance of Rs.10000/- and if the balance falls below this level, a service penalty of Rs.500/- is imposed.

Create a class Account that stores customer name, account number and opening balance.

From this class, derive the classes Current and Savings to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:

* 1. Deposit an amount for a customer and update the balance
  2. Display the account details
  3. Compute and deposit interest
  4. Withdraw an amount for a customer after checking the balance and update the balance
  5. Check for the minimum balance (for current account holders), impose penalty, if necessary, and update the balance.

Implement these without using any constructor.