Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao-Goa
SY BCA, Semester – III, Semester End Examination, November 2023
Object Oriented Concepts (CAC 109)

<u>Duration: 2 Hours</u>   Max. Marks:60

Instructions:
   1) **All Questions are compulsory.**
   2) **Start each question on a fresh page**
   3) **Figures to the right indicate Full Marks.**

Q1)A. Define the following.   **5x1=5 Marks**
   a) Base Class
   b) Constructor Overloading
   c) Protected Access Specifiers
   d) try block
   e) Generalization in UML

Q1)B. Answer the following in about 25 to 30 words.   **5x1=5 Marks**
   a) Identify the primary purpose of an Use Case Diagram in software design.
   b) Describe method overloading.
   c) Discuss the importance of **super** keyword.
   d) Give examples of two types of Exception defined in Java.
   e) Indicate the purpose of the 'catch' block in Java?

Q2) Answer the following.   **10 Marks**
   A) Discuss any 2 features of Object-Oriented Programming.   2
   B) Explain the concept of Inheritance using a suitable example.   3
   C) Based on the information provided below, draw a Class Diagram showing 5
      appropriate relationships and multiplicity

A member should be able to issue books. Each member can issue only a single
book. The software takes the current system date as the date of issue and
calculates the date of return. The due date for the return of the book is stamped
on the book. Any person can return the issued books (if they have the member
code).The system displays the member's details on whose name the
book is issued as well as the date of issue and return of the book. The
information is saved and the corresponding updating takes place in database.

Q3) Answer the following.   **10 Marks**
   A) State the purpose of Composition relationship in UML.   2
   B) List the various symbols and notations of an Use Case Diagram.   3
   C) Draw a Use Case diagram for an ATM System. Identify the actors and   5
      various use cases with appropriate relations.

Q4) Answer the following. **10 Marks**

 A) List the purpose of UML Diagrams. 2

 B) Explain the significance of Copy Constructor, and how does it differ from Parameterized Constructor? 3

 C) Draw an Activity diagram for an Online shopping using an E-commerce Website. 5

Q5) Answer the following. **10 Marks**

 A) Explain the use of **new** and **this** operator in java programming language (2 points each) 2

 B) Discuss with an example how User-Defined Exception is defined and used. 3

 C) Explain parameterized constructor and copy constructor along with an example of each. 5

Q6) Answer the following. **10 Marks**

 A) Explain hierarchical inheritance and multiple inheritance. 2

 B) Differentiate between Abstract Method and Concrete Method. (3 points each) 3

 C) Discuss whether Multiple Inheritance is supported in Java. Demonstrate with an example how it is implemented in Java. 5