GLS UNIVERSITY
FCAIT BCA
SEM IV
210301405 PRACTICAL ON CORE JAVA
UNIT -3

1. Define a class MotorVehicle to take modelName, modelNumeber, modelPrice, and a method display() to display these details. Create another class Car which inherits the class MotorVehicle and has the member discountRate and having display() method to display details. Test this class with suitable constructor. If necessary use the super keyword.
2. Consider an employee class, which contains fields such as name and designation. And a subclass, which contains a field salary. Write a program for inheriting this relation.
3. Write a program to calculate arithmetic mean in the superclass and standard deviation in the subclass.
4. Write a program to calculate the area of circle, Rectangle & Square by using interface.
5. Write an interface called Numbers with a method int process(int x,int y). Write a class called Sum in which the process() method finds the sum of two numbers and returns an int value. Write another class called Average in which the process() method finds the average of the two numbers and returns an int value.
6. Create a class name Book that contains data fields for the title and number of pages. Include get and set methods for these fields. Next, create a subclass named Textbook, which contains an additional field that holds a grade level for the Textbook and additional methods to get and set grade level field. Write an application that demonstrates using objects of each class.
7. Write a program in Java in which a subclass constructor invokes the constructor of the super class and instantiate the values.
8. Write a program in Java to demonstrate implementation of multiple inheritance using interfaces.
9. Create a class with a method that prints "This is parent class" and its subclass with another method that prints "This is child class". Now, create an object for each of the class and call -
   method of parent class by object of parent class
   method of child class by object of child class
   method of parent class by object of child class
10. Write a Java Program to create a simple class to find out the Area and perimeter of rectangle and box using super and this keyword.
11. Write a Java program to create an interface area having pie as its data members and a method compute(float, float)
12. Create a class result which implements sports interface having data member total (stores total of three subject marks) and percentage (total + sportmarks). Calculate the percentage and grade and display the same.
13. Create a class named 'Rectangle' with two data members 'length' and 'breadth' and two methods to print the area and perimeter of the rectangle respectively. Its constructor

having parameters for length and breadth is used to initialize length and breadth of the rectangle. Let class 'Square' inherit the 'Rectangle' class with its constructor having a parameter for its side (suppose s) calling the constructor of its parent class as 'super(s,s)'. Print the area and perimeter of a rectangle and a square.

14. Create a class named 'Shape' with a method to print "This is This is shape". Then create two other classes named 'Rectangle', 'Circle' inheriting the Shape class, both having a method to print "This is rectangular shape" and "This is circular shape" respectively. Create a subclass 'Square' of 'Rectangle' having a method to print "Square is a rectangle". Now call the method of 'Shape' and 'Rectangle' class by the object of 'Square' class.

15. Write a program to calculate the area by using package.

16. Write a java program which shows String class methods.

17. Write a java program using StringBuffer Class and its methods.

18. Write a java program using Wrapper class.

19. Create a object of string buffer class,which stores a string from the user. Perform the following operations.
    - Reverse the string and print it.
    - Take another string from the user and append it with existing string.
    - Print the capacity of the modified string.

20. Consider string s=”FCAIT GLS University”, modify the string s as
    - Convert the string into uppercase and lowercase
    - Find out the character at position 5.
    - Find out the sub string as GLS University.

21. Write a java program which contains the two string from user and perform the following string.
    - Find out whether two strings are equal.
    - Find out whether two strings equal when case is ignored.
    - Compare two strings.

22. Write a Java program to do following operations on String.
    1. To find the reverse of a string
    2. To replace string
    3. To convert into upper case
    4.Conver the uppercase string to lowercase.

23. Create a package named MyPackage which consists a class named Student which stores information like the roll number, first name, middle name, last name, address and age of the student. The class should also contain appropriate get and set methods.Create a package named mypack that import MyPackage.Create a class Sample in mypack.Create Student class object in Sample class.

24. Create a package named Calc which contains a class Calculator. Class Calculator have 2 methods sum() and subtraction() which perform the operation on two numbers.
    Create a package named SciCalc that import package Calculator. SciCalc contains a class SciCalculator. Class SciCalculator have 1 methods squareroot().Create Calculator class object in SciCalculator class and call all the methods of Calculator class.

25. Write a java program which shows importing of classes from other packages.

26. Write a java program to create a package that access the member of external class as well as the same class.

Program Allocation as per below table -

Roll Number	Questions
A1 to A10, B1 to B10, C1 to C10	1,11,10,5,3,16
A11 to A20, B11 to B20, C11 to C20	2,12,9,6,3,17
A21 to A30, B21 to B30, C21 TO C30	3,13,8,7,16,18
A31 to A40, B31 to B40, C31 TO C40	4,14,7,8,3,19
A41 to A50, B41 to B50, C41 TO C50	5,15,6,9,3,20
A51 to A60, B51 to B60, C51 TO C60	6,11,5,10,3,21
A61 to A70, B61 to B70, C61 TO C70	7,12,4,1,3,22
A71 to A80, B71 to B80, C71 TO C80	8,13,3,2,16,21
A81 to A90, B81 to B90, C81 TO C90	9,14,2,3,16,20
A91 Onwards, B91 Onwards,C91 Onwards	10,15,1,4,3,19