**Programming in Java Bright Student Assignment Questions**

**CO1 related Assignment Questions**

1. Create a class called Employee that contains four instance variables—an Id (Employee ID), a first name (type String), a last name (type String) and a monthly salary (double). Provide a constructor that initializes the three instance variables. Provide a setter and a getter method for each instance variable. Write a test application named “EmployeeTest” that demonstrates class Employee’s capabilities. Create two Employee objects and display each object’s yearly salary. Give each Employee a 10% raise and display each Employee’s yearly salary again.
2. Define the class “TaxiMeter” having the following members:

**Data Members/instance members**

taxino – to store taxi number

name - to store pessanger’s name

km – to store number of kilometres travelled

**Member Methods(Functions):**

input() - to take input values of members

calculate() – to calculate the bill of a customer according to given conditions.

|  |  |
| --- | --- |
| **Kilometres Travelled** | **Rate / km** |
| <= 10 | ₹ 25 |
| 10 < km <=60 | ₹ 22 |
| 60 < km <= 120 | ₹ 18 |
| 120 < km <= 200 | ₹ 15 |
| > 200 | ₹ 10 |

**Note:** Apply GST of 9% on the calculated bill amount.

display() - to display the output in the following format

TaxiNo Name Kms GST Final\_Bill\_Amount

Write a Java program to test the functionality of “Taximeter” class by creating some instances.(array of objects)

**CO2 related Assignment Questions**

1. Define a class "Person" having data members i.e. id, name and city. Derive a class named "Student" from the class Person, having data members i.e. branch, semester and marks of 5 subjects (using array). Develop a member function "avgMarks()" to calculate average marks of a student. Another class "VisitingTeacher" inherits the class Person, having data members i.e. experience (in years) and rate of lecture per hour. Develop a member function "calSalary()" to calculate the salary by inputting number of hours worked per month. Consider the rate of lecture as 1.5 times for working hours exceeding 40 hours.
2. Create a class “Account”. Derive 2 classes “Savings” and “Current” from Account class. Provide necessary instance members and member methods and Write a Java application to test the given class functionality.

**CO3 related Assignment Questions**

1. W.A.P. to find factorial of a number. The number should be entered through command line argument. Handle NumberFormatException and ArrayIndexOutOfBoundsException.
2. Write a Java program to count number of words from a given string.
3. Write a Java program to search a particular word in a given string.
4. Create a package named “MyPack”. Define a class “Student” inside this package having id, name, sem and city as data members. Provide appropriate setter and getter methods. Write a Java program to test the functionality of Student class outside the MyPack package.

**CO4 related Assignment Questions**

1. Write a multithreaded program to calculate the count of prime numbers between 1 to 200 numbers. Each thread should look after 100 numbers.
2. Write a multithreaded program for 3 threads to count number of words from the string given to each thread.

**CO5 related Assignment Questions**

1. Develop an AWT Frame to calculate BMI value of a person. Provide necessary labels, text fields and buttons. Also add a “Reset” button to reset the values of all text fields. (Use null layout manager)
2. Design and Develop a Swing Frame application for login form using adapter class.