1. Write a java program to find the sum of three numbers.
2. Develop a Java application to generate Electricity bills. Create a class with the following members: Consumer no., consumer name, previous month reading, current month reading, type of EB connection (i.e domestic or commercial). Compute the bill amount using the following tariff. If the type of the EB connection is domestic, calculate the amount to be paid as follows:

First 100 units – Rs. 1 per unit  
101-200 units – Rs. 2.50 per unit  
201 -500 units – Rs. 4 per unit  
> 501 units – Rs. 6 per unit

If the type of the EB connection is commercial, calculate the amount to be paid as follows:

First 100 units – Rs. 2 per unit  
101-200 units – Rs. 4.50 per unit  
201 -500 units – Rs. 6 per unit  
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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find whether the given number is odd or even using a control statement.
2. Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa) , time converter (hours to minutes, seconds and vice versa) using packages.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the factorial of a number.
2. Develop a java application with Employee class with Emp\_name, Emp\_id, Address, Mail\_id, Mobile\_no as members. Inherit the classes, Programmer, Assistant Professor, Associate Professor and Professor from employee class. Add Basic Pay (BP) as the member of all the inherited classes with 97% of BP as DA, 10 % of BP as HRA, 12% of BP as PF, 0.1% of BP for staff club fund. Generate pay slips for the employees with their gross and net salary.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the Fibonacci series of a number.
2. Design a Java interface for ADT Stack. Implement this interface using array. Provide necessary exception handling in both the implementations.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the swap of two numbers.
2. Write a program to perform string operations using ArrayList. Write functions for the following
   1. Append – add at end  
      Insert – add at particular index  
      Search  
      List all string starts with given letter

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the palindrome of a number.
2. Write a Java Program to create an abstract class named Shape that contains two integers and an empty method named print Area(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method print Area () that prints the area of the given shape.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the swap of two numbers without using a third variable.
2. Write a Java program to implement user defined exception handling.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the Armstrong of a number.
2. Write a Java program that reads a file name from the user, displays information about whether the file exists, whether the file is readable, or writable, the type of file and the length of the file in bytes.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the Fibonacci series of a number.
2. Write a java program that implements a multi-threaded application that has three threads. First thread generates a random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find the factorial of a number.
2. Write a java program to find the maximum value from the given type of elements using a generic function

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**

1. Write a java program to find whether the given number is odd or even.
2. Design a calculator using event-driven programming paradigm of Java with the following options.  
   a) Decimal manipulations  
   b) Scientific manipulations

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| **AIM & ALGORITHM**  **(20)** | **PROGRAM**  **(40)** | **EXECUTION**  **(20)** | **OUTPUT**  **(10)** | **VIVA**  **(10)** | **TOTAL**  **(100)** |
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**INTERNAL EXAMINER EXTERNAL EXAMINER**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**191CS32B OBJECT-ORIENTED PROGRAMMING LABORATORY**

**DATE : 04.01.2022 & 05.01.2021 SESSION : FN&AN**

**YEAR/SEM : II/III**

**LIST OF EXPERIMENTS**

1. Develop a Java application to generate Electricity bills. Create a class with the following members: Consumer no., consumer name, previous month reading, current month reading, type of EB connection (i.e domestic or commercial). Compute the bill amount using the following tariff.

If the type of the EB connection is domestic, calculate the amount to be paid as follows:

♣First 100 units – Rs. 1 per unit  
♣ 101-200 units – Rs. 2.50 per unit  
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♣ > 501 units – Rs. 6 per unit

If the type of the EB connection is commercial, calculate the amount to be paid as follows:

♣ First 100 units – Rs. 2 per unit  
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2. Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa) , time converter (hours to minutes, seconds and vice versa) using packages. CS8383 Syllabus Object Oriented Programming Laboratory

3. Develop a java application with Employee class with Emp\_name, Emp\_id, Address, Mail\_id, Mobile\_no as members. Inherit the classes, Programmer, Assistant Professor, Associate Professor and Professor from employee class. Add Basic Pay (BP) as the member of all the inherited classes with 97% of BP as DA, 10 % of BP as HRA, 12% of BP as PF, 0.1% of BP for staff club fund. Generate pay slips for the employees with their gross and net salary.

4. Design a Java interface for ADT Stack. Implement this interface using array. Provide necessary exception handling in both the implementations.

5. Write a program to perform string operations using ArrayList. Write functions for the following

a. Append – add at end  
b. Insert – add at particular index  
c. Search  
d. List all string starts with given letter

6. Write a Java Program to create an abstract class named Shape that contains two integers and an empty method named print Area(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method print Area () that prints the area of the given shape. CS8383 Syllabus Object Oriented Programming Laboratory

7. Write a Java program to implement user defined exception handling.

8. Write a Java program that reads a file name from the user, displays information about whether the file exists, whether the file is readable, or writable, the type of file and the length of the file in bytes.

9. Write a java program that implements a multi-threaded application that has three threads. First thread generates a random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.

10. Write a java program to find the maximum value from the given type of elements using a generic function.

11. Design a calculator using event-driven programming paradigm of Java with the following options.  
a) Decimal manipulations  
b) Scientific manipulations

12. Develop an Applet program to implement Graphics Application.

13. Develop a mini project for any application using Java concepts.

**INTERNAL EXAMINER EXTERNAL EXAMINER**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**191CS32B OBJECT-ORIENTED PROGRAMMING LABORATORY**

**DATE : 04.01.2022 & 05.01.2021 SESSION : FN&AN**

**YEAR/SEM : II/III**

**QUESTION PAPER SET**

1. Write a java program to find the sum of three numbers.
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11. Write a java program to find whether the given number is odd or even.
12. Design a calculator using event-driven programming paradigm of Java with the followingoptions.  
    a)Decimalmanipulations  
    b) Scientific manipulations

**INTERNAL EXAMINER EXTERNAL EXAMINER**