**20MCA132- OBJECT ORIENTED PROGRAMMING LAB**

BATCH 1: MONDAY(ROLL NO :29 -56)

BATCH 2: THURSDAY(ROLL NO:1-28)

| CYCLE 1: CO1 | | BATCH1 | BATCH2 |
|---|---|---|---|
| 1 | Write a program to display the message “WELCOME JAVA”. | **10/2/25, 17/2/25** | **13/2/25 20/2/25** |
| 2 | Write a program to read an integer from the keyboard and check whether the number is even or odd. | | |
| 3 | Write a program to print the leap years within the given range. | | |
| 4 | Define a class 'product' with data members pcode,pname and price. Create three objects of the class and find the product having the lowest price. | | |
| 5 | Write a program to perform complex number addition. | | |
| 6 | Create a class CPU with attribute price. Create an inner class processor (no of cores,manufacturer)and static nested class RAM(memory,manufacturer).Create an object of CPU and print information of processor and RAM. | | |
| CYCLE 2: CO2 | | BATCH1 | BATCH2 |
| 7 | Write a Program which accepts the marks of a student into a 1D array from the keyboard. Calculate and display total marks & percentage obtained by the student. | **24/2/25, 3/3/25** | **27/2/25 6/3/25** |
| 8 | Read two matrices from the console and perform matrix addition. | | |
| 9 | Read a matrix from the console and check whether it is symmetric/not | | |
| 10 | Program to sort strings. | | |
| 11 | Program to sort characters from a string. | | |
| 12 | Search an element in an array. | | |
| 13 | Program to create a class for Employee having attributes eNo, eName,Salary.Read n employ information and search for an employee given eNo using the concept of array of objects. | | |

| CYCLE 3: C03 | | BATCH1 | BATCH2 |
|---|---|---|---|
| 14 | Using the concept of method overloading find the area of different shapes rectangle, circle and square. | **10/3/25, 17/3/25** | **13/3/25 20/3/25** |
| 15 | Create a class ‘Employee’ with data members Empid, Name, Salary, Address and constructors to initialize the data members. Create another class ‘Teacher’ that inherit the properties of class employee and contain its own data members department, Subjects taught and constructors to initialize these data members and also include a display function to display all the data members. Use array of objects to display details of N teachers. | | |
| 16 | Create a class ‘Person’ with data members Name, Gender, Address, Age and a constructor to initialize the data members and another class ‘Employee’ that inherits the properties of class Person and also contains its own data members like Empid, Company name, Qualification, Salary and its own constructor. Create another class ‘Teacher’ that inherits the properties of class Employee and contains its own data members like Subject, Department, Teacher id and also contain constructors and methods to display the data members. Use array of objects to display details of N teachers. | | |
| 17 | Using the concept of method overriding, find the area of shapes Rectangle, Circle and Square. | | |
| 18 | Create an Abstract Class ‘Shape’ with an abstract method find Area to find the area of different shapes. Create subclasses Rectangle, Circle and Square from Shape. Calculate and display area of Rectangle, Circle and Square | | |
| 19 | Create an interface having prototypes of functions area() and perimeter(). Create two classes Circle and Rectangle which implement the above interface. Create a menu driven program to find the area and perimeter of objects. | | |

| CYCLE 4: C04 | | BATCH1 | BATCH2 |
|---|---|---|---|
| 20 | Write a program that demonstrates exception handling mechanisms.<br>(a) ArithmeticException<br>(b) ArrayIndexOutOfBoundsException | **24/3/25**<br>**7/4/25** | **27/3/25**<br>**10/4/25** |
| 21 | Find the average of N positive integers, raising a user defined exception for each negative input. | | |
| 22 | Define 2 classes; one for generating a multiplication table of 5 and other for displaying first N prime numbers. Implement using threads. (Thread class) | | |
| 23 | Define 2 classes; one for generating Fibonacci numbers and other for displaying even numbers in a given range. Implement using threads. (Runnable Interface) | | |
| CYCLE 5: C05 | | BATCH1 | BATCH2 |
| 24 | Program to find a maximum of three numbers using AWT. | **21/4/25** | **24/4/25** |
| 25 | Implement a simple calculator using AWT components. | | |
| CYCLE 6: C06 | | BATCH1 | BATCH2 |
| 26 | Write a program to write to a file, then read from the file and display the contents on the console. | **28/4/25** | **15/5/25** |
| 27 | Write a program to copy one file to another. | | |

INTERNAL LAB EXAM:

BATCH 1 (Roll no 29-56) : 5/5/25 Monday
BATCH 2 (Roll no 1-28) : 8/5/25 Thursday

**CLASS ENDS : 23/5/2025**

Commencement of MCA S2 External Lab Exam: **2/6/2025**