BIRLA VISHVAKARMA MAHAVIDYALAYA
ENGINEERING COLLEGE
(AN AUTONOMOUS INSTITUTION)
INFORMATION TECHNOLOGY DEPARTMENT
AY: 2025-26, SEMESTER-VII

PRACTICAL LIST

Faculty Name: Jalpa Ardeshana
Subject: Python Programming (4IT01)
Year: 4th (7th Semester)

Sr. No.	Practical Aim	Hours Required
1.	**Basic of python:** • WAP to calculate area and perimeter of the square. • WAP to swap the value of two variables. • WAP to calculate simple interest. • WAP to convert days into months and days.	2
2.	**If…else and elif:** • Write a program to check given number is even or odd. • Write a program to take sentence from user and count no of digits , letters, upper case letters, lower case letters. • Write a program to find maximum number from three number. • Write a program to calculate the grade based on the percentage score. • Write a program to check if the input year is a leap year of not. • Write a program to Solve a quadratic equation $ax^2+bx+c=0$. • Write a program to implement a two-player rock-paper-scissors game with input validation. • Write a program that takes the working hours and wages of 5 employee and calculate salary of employee.	4
3.	**Loops:** • WAP to print all even numbers between 1 to 100 using while loop. • WAP to print all prime numbers between 1 to 50 using for loop. • WAP to print the patter ‘D’ • WAP to calculate factorial of a number. • WAP to takes in a number and finds the sum of digits in a number. • WAP to print bottom to top pyramid of ‘$’.	2
4.	**Tuple, List and Dictionaries:** • WAP to find min and max value from list of tuples. • WAP to convert Celsius to Fahrenheit and vice versa using tuples for unit conversions. • WAP to sum all the items in a list. • WAP to Find the Union of Two Lists. • WAP to transpose a matrix using nested lists. • WAP to combine two dictionary adding value of a common key. • WAP to Multiply All the Items in a Dictionary. • WAP to find the factorial of a number using recursion and store result with a dictionary.	4

5.	**String (with and without using inbuilt function):** • WAP to remove left and right hand side space form the string. • WAP to find the longest word in a string. • WAP to count the number of vowels in a string. • WAP to reverse a given String without using function. • WAP to check if a string is a palindrome. • WAP to check if two strings are anagrams of each other.	2
6.	**Functions:** • WAP to create a function that takes a number as a parameter and check the number is prime or not. • WAP to create a function that takes a list of numbers as a parameter and returns the sum of squares of all numbers. • WAP to calculate total upper case and lower case letter of a given string. • WAP to create a function that takes a list of integers as a parameter and calculates the product of all the numbers. • WAP to create a function that takes two strings as parameters and checks if the first string ends with the second string.	4
7.	**OOP:** • WAP to add complex number using class and object. • WAP to check string is palindrome or not using class. • WAP multiply the positive numbers using multiple inheritance. • WAP to create employee salary system for PF, TDS and 80C.	2
8.	**Exception:** • WAP to handle division by zero in a Python program that also validates numeric input to avoid ZeroDivisionError and ValueError. • WAP to create a custom Python exception class MyCustomException with detailed error messages and context-specific information for exceptional conditions. • WAP to incorporate exception handling for various errors like FileNotFoundError, PermissionError, and TypeError during input processing and operations.	2
9.	**File:** • WAP to create a file and store given text and calculate total number of line and space and display it on shell. • WAP to store content of two file into one file and do addition of all the digit available in file. • WAP to reads a file, generates a histogram (frequency distribution) of all letters (both uppercase and lowercase) present in the file, and displays this histogram. • WAP to Calculates the size of multiple files in a directory, generates a report listing file names along with their sizes (in bytes, kilobytes, and megabytes), and saves this report to a text file.	2
10.	**Regular Expression:** • WAP to identify employees with the address pincode 388120 using regular expressions. Store the names along with their salaries in a file. Additionally, update the records in the file by changing the pincode from 388120 to 388325 for all employees whose address previously had the old pincode. • WAP to find out name starts with letter R or S and ends with H or J.	2

11.	**Turtle & Tkinter** • Write a program to print pattern of square within square (five time), triangle inside the square. • Write a program to print pattern of square inside the circle and triangle inside the square. • Create Chat application using client and server programming. • Create Application for sector like banking, finance and health care using Tkinter.	2
12.	**NumPy:** • Write a program to search (min, max) element and sort in the given array using NumPy. • Write a program to extract common item from two different array using NumPy. • Develop a Python program that utilizes NumPy to generate an array of random numbers, compute basic statistics such as mean, median, and standard deviation, and visualize the data using histograms or plots.	2