

### **1. Basic Concepts:**

- a. Write a Python program to swap the values of two variables without using a temporary variable.
- b. Create a program that takes a user's age as input and prints whether they are eligible to vote or not.
- c. Write a function to check if a given number is prime.

### **2. Control Flow:**

- a. Implement a Python program to find the maximum of three numbers.
- b. Create a simple calculator program that takes two numbers and an operator (+, -, \*, /) as input and performs the corresponding operation.
- c. Write a program to print the Fibonacci sequence up to a given number.

### **3. Data Structures:**

- a. Implement a stack data structure with push and pop operations.
- b. Create a Python program to count the occurrences of each word in a given text.
- c. Write a function to check if a given string is a palindrome.

### **4. Functions:**

- a. Design a function to calculate the factorial of a given number.

b. Create a program with a function that takes a list of numbers as input and returns the sum and average.

c. Write a recursive function to calculate the nth Fibonacci number.

### **5. File Handling:**

a. Write a program that reads data from a text file and prints the number of lines, words, and characters in the file.

b. Create a Python script to copy the contents of one file to another.

c. Implement a program that reads a CSV file and calculates the average of a specific column.

### **6. Object-Oriented Programming (OOP):**

a. Create a class representing a book with attributes like title, author, and price. Include methods to display information about the book.

b. Design a class representing a bank account with methods for deposit, withdrawal, and balance inquiry.

c. Implement inheritance by creating a base class "Shape" and derived classes like "Circle" and "Rectangle."

### **7. Exception Handling:**

a. Write a program that handles division by zero using a try-except block.

b. Implement a function that reads an integer from the user but handles the ValueError if a non-integer is entered.

c. Create a program that handles file not found exception when trying to open a non-existent file.