**ANSWERS**

**Q1. Write a Python Program to Display Fibonacci Sequence Using Recursion?**

**Ans.** Please find below the code to display fibonacci sequence using recursion:

def fibonacci\_recursive(n):

if n <= 0:

return []

elif n == 1:

return [0]

elif n == 2:

return [0, 1]

else:

fib\_sequence = fibonacci\_recursive(n - 1)

fib\_sequence.append(fib\_sequence[-1] + fib\_sequence[-2])

return fib\_sequence

n = int(input("Enter the number of terms: "))

fib\_sequence = fibonacci\_recursive(n)

print("Fibonacci Sequence:", fib\_sequence)

**Q2. Write a Python Program to Find Factorial of Number Using Recursion?**

**Ans.** Please find below the code to find factorial of number using recursion:

def factorial\_recursive(n):

if n == 0 or n == 1:

return 1

else:

return n \* factorial\_recursive(n - 1)

num = int(input("Enter a number: "))

factorial = factorial\_recursive(num)

print(f"The factorial of {num} is {factorial}")

**Q3. Write a Python Program to calculate your Body Mass Index?**

**Ans.** Please find below the code to calculate body mass index:

def calculate\_bmi(weight, height):

bmi = weight / (height \*\* 2)

return bmi

weight = float(input("Enter your weight in kg: "))

height = float(input("Enter your height in meters: "))

bmi = calculate\_bmi(weight, height)

print(f"Your BMI is {bmi:.2f}")

**Q4. Write a Python Program to calculate the natural logarithm of any number?**

**Ans.** Please find below the code to calculate the natural logarithm of any number:

import math

num = float(input("Enter a number: "))

logarithm = math.log(num)

print(f"The natural logarithm of {num} is {logarithm:.2f}")

**Q5. Write a Python Program for cube sum of first n natural numbers?**

**Ans.** Please find below the code for cube sum of first n natural numbers:

def cube\_sum(n):

return (n \* (n + 1) // 2) \*\* 2

n = int(input("Enter a value for n: "))

result = cube\_sum(n)

print(f"The cube sum of first {n} natural numbers is {result}")