```
def Fibonacci(n):
    if n == 0:
        return 0
    elif n == 1:
        return 1
    else:
        return Fibonacci(n-1) + Fibonacci(n-2)

while True:
    n = int(input("Enter an integer (-1 to exit): "))
    if n == -1:
        break
    result = Fibonacci(n)
    print(f"The {n}-th Fibonacci number is {result}")
```

Data Structures and Algorithms IT2070

Year two Semester two 2020

Online Examination

Sri Lanka Institute of Information Technology

Time: 30 minutes

Paper Number 2 (20 marks)

The Fibonacci sequence is the series of numbers:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34,

The next number is found by adding up the two numbers before it as given by the following mathematical function.

$$F_0 = 0$$
$$F_1 = 1$$
$$F_n = F_{n-1} + F_{n-2}, n > 1$$

A recursive algorithm for the Fibonacci calculation is given below:

Algorithm 1: F(n)

Input: Some non-negative integer n
Output: The nth number in the Fibonacci Sequence
if $n \leq 1$ **then**
  return n
else
  return $F(n-1) + F(n-2);$

a) Write a program in Python to read an integer from the keyboard.
b) Develop a function in python named as Fibonacci and implement the above recursive algorithm.
c) Pass the input number as parameter to the function developed and get the Fibonacci number as output.
d) Use the loop to run the program and display the correct output until user inputs -1.

Upload your answer using given template to the course web link "Paper Number 2"

Grading Sheet:

1) Program is compiling. **2 marks**
2) Program is running successfully. **2 marks**
3) Program takes the input number as integer. **2 marks**
4) Correct implementation Fibonacci function. **6 marks**

5) Correct output **2 marks**
6) Use of loop correctly **4 marks**
7) Include comments and properly indented. **2 marks**
8) Plagiarism testing tool results:……..