

Programming Basic Assignment 6

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

```
In [7]: def fibo(n):
        if(n<2):
            return n
        else:
            return fibo(n-1)+fibo(n-2)
n=int(input("How many terms? "))
for i in range(n):
    print(fibo(i))
```

How many terms? 6
0
1
1
2
3
5

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

```
In [13]: n=int(input("Enter any number: "))
def fact(n):
    if(n<2):
        return n
    else:
        return n*fact(n-1)
print("Factorial of {} is {}".format(n,fact(n)))
```

Enter any number: 6
Factorial of 6 is 720.

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

```
In [ ]: the_height = float(input("Enter the height in cm: "))
the_weight = float(input("Enter the weight in kg: "))
# defining a function for BMI
the_BMI = the_weight / (the_height/100)**2
# printing the BMI
print("Your Body Mass Index is", the_BMI)
# using the if-elif-else conditions
if the_BMI <= 18.5:
    print("Oops! You are underweight.")
elif the_BMI <= 24.9:
    print("Awesome! You are healthy.")
elif the_BMI <= 29.9:
    the_print("Eee! You are over weight.")
else:
    print("Seesh! You are obese.")
```

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

```
In [15]: import math

n=int(input("Enter any number: "))
print ("Natural logarithm of {} is= {}".format(n,math.log(n)))
```

Enter any number: 100
Natural logarithm of 100 is= 4.605170185988092

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

```
In [16]: def sumOfSeries(n):
    sum = 0
    for i in range(1, n+1):
        sum +=pow(i,3)

    return sum

# Driver Function
n=int(input("Enter any number: "))
print(sumOfSeries(n))
```

Enter any number: 5
225