PYTHON ASSIGNMENT - 9

Question 1 –

```python
#1. Write a program to find sum of following series using recursive functions:  i. 1! + 2!  + 3! + 4! +…. + n!


def factorial(n):
    if n==1:
        return 1
    return n * factorial(n-1)

def sumofSeries(n):
    if n== 1:
        return factorial(1)
    return factorial(n) + sumofSeries(n-1)

n = int(input("Enter your number:"))
print("Answer of your series is:",sumofSeries(n))
```

Question 2 –

```python
#Q2. Write a program to check if given number is Armstrong or not using recursive function.


def armstrong(num, count, sum):
    if num == 0:
        return sum
    sum = sum + (num % 10) ** count
    return armstrong(num // 10, count, sum)

num = int(input("Enter your number:"))
count = len(str(num))
ans = armstrong(num, count, 0)

if num == ans:
    print(num, "is an Armstrong number.")
else:
    print(num, "is not an Armstrong number.")
```

Question 3 –

```python
# Question 3 Write a program to reverse a given number using recursive function...


def reverse(n,rev):
    if n == 0:
        return rev
    rev = rev*10 + n%10
    return reverse(n//10,rev)

n = int(input("Enter your number:"))
print("Reverse of your number is:",reverse(n,0)) #153
```

Question 4 –

```python
#Q4.  Write a program to find sum of n numbers using recursion...


def sumofSeries(n):
    if n==1:
        return 1
    return n + sumofSeries(n-1)

n = int(input("Enter value of n:"))
print("Sum of your series is:",sumofSeries(n)) #5
```

Question 5 –

```python
#Q5. Write a program to find factorial using recursion...


def factorial(num):
    if num == 1:
        return 1
    return num * factorial(num-1)

num = int(input("Enter your number:"))
print("Factorial of your number is:",factorial(num))
```

Question 6 –

```python
#Q6.  Write a program to print Fibonacci series using recursion...


def fibonacci_Series(n,a,b):
    if n==0:
        return
    c = a+b
    print(c)
    a=b
    b=c
    return fibonacci_Series(n-1,a,b)

n = int(input("Please Enter number :"))
fibonacci_Series(n,1,0)
```

Question 7 –

```python
#Question 7. Write a program to find sum of digits using recursion...


def sumofDigits(n,sum):
    if n == 0:
        return sum
    sum += n%10
    return sumofDigits(n//10,sum)

num = int(input("Enter your number:"))
print("Sum of digits of your number is:",sumofDigits(num,0))
```

Question 8 –

```python
def prime(num,i):
    if i == num:
        return "It is prime number."

    if num%i==0:
        return " It is not prime Number."
    else:
        return prime(num,i+1)

num = int(input("Enter your number:"))
print(prime(num,2))
```

Question 9 –

```python
#Q9. Write a program to calculate the m to the power n using recursion..


def power(m,n):
    if n==1:
        return m

    return m * power(m,n-1)

m = int(input("Enter m: "))
n = int(input("Enter n: "))

print(f" {m} to the power {n} is {power(m,n)}")
```