

EE103: Introduction to Programming

Laboratory-3

Problem 1 (50 pts)

1. Write a recursive function `power(base, exponent)` that calculates and returns $base^{exponent}$. For example $power(3, 4) = 3 * 3 * 3 * 3$. Assume that exponent is an integer greater than or equal to 1.

```
Enter base : 3
Enter exponent : 4

The result of power(3,4) is 81
```

Problem 2 (50 pts)

2. Write a recursive function `Sum(base, exponent)` that calculates and returns $\sum_{n=1}^{exponent} base^n$. For example, $Sum(3, 4) = 3^1 + 3^2 + 3^3 + 3^4$. Assume that exponent is an integer greater than or equal to 1.

```
Enter the base: 10
Enter the exponent : 5

The result of sum(10,5) is 111110
```

Hint : You can use `pow()` function in *math.h* library.