Lab 06 Recursion

**Question 1:**

Write the partial code to calculate the factorial value.

**5! = 5 \* 4 \* 3 \* 2 \* 1**

1. Iteration – use of for loop

int fact = 1;

int n = 5;

for (int i=n;i>0;i--) {

fact \*= i;

}

1. Recursion – use of base case and recursive step

int factorial(int n) {

if (n == 2)

return 2;

return n \* factorial(n-1);

}

**Question 2:**

Write a recursive function to calculate the value for x power of n by using the given prototype as below:

int power(int x, int n);

int power(int x , int n) {

if (n == 0)

return 1;

return x \* power(x,n-1);

}

**Question 3:**

Write a function using Recursion to print numbers from n to 0 by using the given prototype as below:

void printNto0 (int n);

void printNto0 (int n) {

if (n<0 )

return;

cout << n << “ “;

printNto0(n-1);

}

**Question 4:**

Write a function using Recursion to print numbers from 0 to n by using the given prototype as below:

void print0toN (int n);

(You just need to shift one line in the program of question 4.)

void print0toN (int n) {

if (n<0 )

return;

print0toN(n-1);

cout << n << “ “;

}