Q1. Write a C program to find factorial of a number using recursion

Code:-

```
#include<stdio.h>
int multiplyNumbers(int n);
int main() {
    int n;
    printf("Enter a positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %ld", n, multiplyNumbers(n));
    return 0;
}

int multiplyNumbers(int n) {
    if (n>=1)
        return n*multiplyNumbers(n-1);
    else
        return 1;
}
```

OUTOPUT:-

Enter a positive integer: 5

Factorial of 5 = 120

Q2. Write a c program to generate the Fibonacci series using recuursion

Code:-

```
#include <stdio.h>
int fibonacci(int n)
{
    if(n == 0)
    return 0;
    else if(n == 1)
    return 1;
    else
    return (fibonacci(n-1) + fibonacci(n-2));
}
int main() {
    int  n;
    printf("Enter the number of terms\n");
    scanf("%d", &n);
    printf("Fibonacci Series: ");
    for (int i = 0; i < n; i++) {
    printf("%d ", fibonacci(i));
}
return 0;
}
```

OUTPUT:-

Enter the number of terms

5

Fibonacci Series: 0 1 1 2 3

Q3. Write a c program to find out the gcd of 2 number using recursion

Code:-

```
#include <stdio.h>
int hcf(int n1, int n2);
int main() {
    int n1, n2;
    printf("Enter two positive integers: ");
    scanf("%d %d", &n1, &n2);
    printf("G.C.D of %d and %d is %d.", n1, n2, hcf(n1, n2));
    return 0;
}
int hcf(int n1, int n2) {
    if (n2 != 0)
        return hcf(n2, n1 % n2);
    else
        return n1;
}
```

OUTPUT:-

Enter two positive integers: 366

60

G.C.D of 366 and 60 is 6.