1)FIBONACCI USING RECURSION:

```c
#include <stdio.h>

int fib(int n);

int main() {
    int n, fibonacci;
    printf("Enter number: ");
    scanf("%d", &n);
    fibonacci = fib(n);
    printf("Fibonacci of %d is %d\n", n, fibonacci);
    return 0;
}

int fib(int n) {
    if (n == 1)
        return 0;
    if (n == 2)
        return 1;
    return fib(n - 1) + fib(n - 2);
}
```

OUTPUT : Enter number= 4

Fibonacci of 4 is 2

2)FACTORIAL USING RECURSION:

```c
#include <stdio.h>

int factorial(int n) {
    if (n < 0) {
        return -1;)
    }
    if (n == 0 || n == 1) {
        return 1;
    }
    return n * factorial(n - 1);
}

int main() {
    int number;
    printf("Enter a number: ");
    scanf("%d", &number);
```

```
    int result = factorial(number);
    if (result == -1) {
        printf("Factorial not defined for negative numbers.\n");
    } else {
        printf("Factorial of %d is %d\n", number, result);
    }

    return 0;
}
```

OUTPUT:

Enter number:5

Factorial of 5 is 120

3)

TOWER OF HANOI:

```
#include <stdio.h>
void TOH(int n, char s, char t, char d) {
    if (n == 1) {
        printf("Move Disk %d from %c to %c\n", n, s, d);
        return;
    }
    TOH(n - 1, s, d, t);
    printf("Move disk %d from %c to %c\n", n, s, d);
    TOH(n - 1, t, s, d);
}

void main() {
    int n = 3;
    TOH(n, 'A', 'B', 'C');
}
```

OUTPUT:

Move Disk 1 from A to C

Move disk 2 from A to B

Move Disk 1 from C to B

Move disk 3 from A to C

Move Disk 1 from B to A

Move disk 2 from B to C

Move Disk 1 from A to C