1.Write a C code for the following.

**Task:**

Given set S={1,2,3,....n}, find:

->the maximum value of a&b which is less than a given integer k, where a and b (where a<b) are two integers from set S.

->the maximum value of a|b which is less than a given integer k, where a and b (where a<b) are two integers from set S.

->the maximum value of a^b which is less than a given integer k, where a and b (where a<b) are two integers from set S.

**Input format**:

The only line contains 2 space-separated integers, n and k , respectively.

**Output Format:**

->The first line of output contains the maximum possible value of a&b.

->The first line of output contains the maximum possible value of a|b.

->The first line of output contains the maximum possible value of a^b.

**Code:**

#include <stdio.h>

#include <string.h>

#include <math.h>

#include <stdlib.h>

void calculate\_the\_maximum(int n, int k)

{

int p=0,q=0,r=0;

for(int i=1;i<=n;i++)

{

for(int j=i+1;j<=n;j++)

{

if((i&j)>p&&(i&j)<k)

p=i&j;

if((i|j)>q&&(i|j)<k)

q=i|j;

if((i^j)>r&&(i^j)<k)

r=i^j;

}

}

printf("%d\n%d\n%d",p,q,r);

}

int main() {

int n, k;

scanf("%d %d", &n, &k);

calculate\_the\_maximum(n, k);

return 0;

}

**Output:**

