**Question-3: Write a c program to Calculate .**

* **Algorithm in Pseudo Code:**

1. Start
2. Define factorial(n) function
3. If n == 0 or n == 1, return 1
4. Else, return n \* factorial(n - 1)
5. Define combination(n, r) function
6. Return factorial(n) / (factorial(r) \* factorial(n - r))
7. In main() function:
8. Take input n and r
9. If r > n or n < 0 or r < 0, print "Invalid input"
10. Else, call combination(n, r) and print result
11. End

* **Codework:**

#include <stdio.h>

int main(){

// without using any user-defined function.

Int n,r;

long fact\_n = 1,fact-r = 1,fact\_n\_r = 1,ncr;

printf(“Enter value for N & R: “);

scanf(“%d %d”, &n, &r);

if( r>n || n<0 || r<0){

printf(“ERROR”); }

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

fact\_n \*= i;}

for(int I = 1; i<= r; i++){

fact\_r \*= i;}

for(int I = 1; i<= n-r; i++){

fact\_n\_r \*= i;}

ncr = fact\_n / (fact\_r \* fact\_n\_r) ;

printf(“Answer is: %li”, ncr);

return 0;}