**\*# WEDDLES’S RULE #\***

QUESTION :- Write a C programme to evaluate , using Weddle’s rule taking 12 equal sub-intervals, correct up to six decimal places.

ANSWER:--

**INPUT**

#include<stdio.h>

#include<math.h>

double f(double x){

return (1/(1+x));

}

main(){

int n,i ,m;

double a,b,h,x,s=0,integral;

printf("\nEnter the no. of sub-intervals(EVEN): ");

scanf("%d",&n);

printf("\nEnter the initial limit: ");

scanf("%lf",&a);

printf("\nEnter the final limit: ");

scanf("%lf",&b);

h = (b-a)/n;

m=n/6;

s=0;

if(n%6==0){

for(i=1;i<=m;i++)

{s=s+(3\*h/10)\*(f(a)+5\*f(a+h)+f(a+2\*h)+6\*f(a+3\*h)+f(a+4\*h)+5\*f(a+5\*h)+f(a+6\*h));

a=a+6\*h;}

}

else{

printf("Sorry ! Weddle rule is not applicable");

}

printf("Value of integral is %f\n", s);

return 0;

}

**OUTPUT**

Enter the no. of sub-intervals(EVEN): 12

Enter the initial limit: 0

Enter the final limit: 8

Value of integral is 2.198816