Program 1

```
#include<iostream.h>
#include<conio.h>
void main()
{
cout<<"Welcome TO C++ Programming";
   getch();
}
```

Program 2

```
#include<iostream.h>
#include<conio.h>
void main()
{
cout<<"Welcome\nTO\nC++\nProgramming";
getch();
}
```

Program 3

```
#include<iostream.h>
#include<conio.h>
void main()
{
cout<<"Welcome"<<endl;     cout<<"To"<<endl;     cout<<"C++"<<endl;
cout<<"Programming";              getch();
}
```

Program 4

```
#include<iostream.h>
#include<conio.h>
void main()
{
 int number1;
 int number2;
 int number3;
 int sum;
 cout<<"Enter your first number\n";
 cin>>number1;
 cout<<"\nEnter your second number\n";
 cin>>number2;
 cout<<"\nEnter your third number\n";
 cin>>number3;
 sum = number1 + number2 - number3;
 cout<<"\nThe sum of "<<number1<<","<<number2<<" and
"<<number3<<" is equal to "<<sum;
 getch();
}
```

Program 5

```
#include<iostream.h>
#include<conio.h>
void main()
{
int radius;
const float PI=3.14159;
float area;
float circumference;
cout<<"Enter the value of circle radius\n";
cin>>radius;
area=PI*radius*radius;
circumference=2*PI*radius;
cout<<"\nThe area of circle is "<<area;
cout<<"\nThe circumference of circle is = "<<circumference;
getch();
}
```

Program 6

```
#include<iostream.h>
#include<conio.h>
void main()
{
float Km,meters;
cout<<"Enter the distance in Km\n";
cin>>Km;
meters=Km*1000;
cout<<"\nThe distance in meters is equal to "<<meters;
getch();
}
```

Program 7

```
#include<iostream.h>
#include<conio.h>
void main()
{
float area,length,breadth,parameter;
cout<<"Enter the value of length\n";
cin>>length;
cout<<"\nEnter the value of breadth\n";
cin>>breadth;
area=length*breadth;
parameter=2*(length+breadth);
cout<<"\nThe area of rectangle is\n "<<area;
cout<<"\nThe parameter of rectangle is\n "<<parameter;
getch();
}
```

Program 8

```
#include<iostream.h>
#include<conio.h>
void main()
{
float basic,ma,ca,hr,total;
cout<<"Enter basic salary\n";
cin>>basic;
ma=0.4*basic;
ca=0.25*basic;
hr=0.1225*basic;
total=basic+ca+ma+hr;
cout<<"\nThe total salary is equal to "<<total;
getch();
}
```

Program 9

```
#include<iostream.h>
#include<conio.h>
void main()
{
float s1,s2,s3,s4,s5,total,percentage;
cout<<"Enter the marks of firet subject\n";
cin>>s1;
cout<<"\nEnter the marks of second subject\n";
cin>>s2;
cout<<"\nEnter the marks of third subject\n";
cin>>s3;
cout<<"\nEnter the marks of fourth subject\n";
cin>>s4;
cout<<"\nEnter the marks of fifth subject\n";
cin>>s5;
total=s1+s2+s3+s4+s5;
percentage= (total/500)*100 ;
cout<<"\nThe total marks are equal to\n"<<total;
cout<<"\nThe percentage is equal to\n"<<percentage;
getch();
}
```

Program 10

```
#include<iostream.h>
#include<conio.h>
void main()
{
float saleprice,profit,total_costprice,average_costprice;
cout<<"Enter the total saleprice of 15 items\n";
cin>>saleprice;
cout<<"\nEnter the total profit earned\n";
cin>>profit;
total_costprice=saleprice-profit;
average_costprice=total_costprice/15;
cout<<"\nTotal costprice of 15 items is\n"<<total_costprice;
cout<<"\nAverage costprice of each item
is\n"<<average_costprice;
getch();
}
```

Program 11

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number,remainder;
cout<<"Enter the number to check whether \nit is even or odd\n";
cin>>number;
remainder=number%2;
if (remainder==0)
cout<<"\nThe number you entered is even";
else
cout<<"\nThe number you entered is odd\n";
cout<<"\nThe program will terminate now";
getch();
}
```

Program 12

```
#include<iostream.h>
#include<conio.h>
void main()
{
float spending,discount,total_discount,total;
cout<<"Enter your total spending\n";
cin>>spending;
if (spending>1500)
discount=0.15;
else
discount=0;
total=spending-(spending*discount);
total_discount=spending*discount;
cout<<"\nYour total amount payable is\n"<<total;
cout<<"\n The discount you get is\n"<<total_discount;
getch();
}
```

Program 13

```
#include<iostream.h>
#include<conio.h>
void main()
{
float bonus,service,current_year,year_of_joining;
cout<<"Enter the current year\n";
cin>>current_year;
cout<<"\nEnter the year of joining\n";
cin>>year_of_joining;
service= current_year-year_of_joining;
if (service>=5)
{
bonus=2500;
cout<<"\nEmploy will get bonus equal to\n"<<bonus;
}
else
{
bonus=0;
cout<<"\nEmploy will not get bonus which is equal to\n"<<bonus;
}
getch();
}
```

Program 14

```
#include<iostream.h>
#include<conio.h>
void main()
{
Float
basic_salary,house_rent_allowance,conveyance_allowance,
medical_allowance,total_allowance,total_salary;
cout<<"Enter the basic salary\n";
cin>>basic_salary;
if (basic_salary<2000)
{
house_rent_allowance=0.1*basic_salary;
conveyance_allowance=0.2*basic_salary;
medical_allowance=0.15*basic_salary;
total_allowance=house_rent_allowance+conveyance_allowa
nce+medical_allowance;
total_salary= basic_salary+total_allowance;
}
else
{
```

```
house_rent_allowance=0.15*basic_salary;
conveyance_allowance=0.25*basic_salary;
medical_allowance=0.2*basic_salary;
total_allowance=house_rent_allowance+conveyance_allowance+medical_allowance;
total_salary=total_allowance+basic_salary;
}
cout<<"\nThe total salary is equal to\n"<<total_salary;
getch();
}
```

Program 15

```
#include<iostream.h>
#include<conio.h>
void main()
{
float saleprice,costprice,difference;
cout<<"Enter the cost price of the item\n";
cin>>costprice;
cout<<"\nEnter the sale price of the item\n";
cin>>saleprice;
difference = saleprice-costprice;
if (difference>0)
cout<<"\nYou have earned profit , which is = "<<difference;
else if (difference<0)
cout<<"\nYou have incurred the loss which is = "<<difference*-1;
else
cout<<"\nYou have neither earned profit nor incurred loss"
getch();
}
```

Program 16

```
#include<iostream.h>
#include<conio.h>
void main()
{
int year;
cout<<"Enter the year to check whether its a leap year or not\n";
cin>>year;
if (year%4==0)
cout<<"\nThe year you enter is a leap year";
else
cout<<"\nThe year you enter is not a leap year";
getch();
}
```

Program 17

```
#include<iostream.h>
#include<conio.h>
void main()
{
int angle1,angle2,angle3,sum;
cout<<"Enter the first angle of triangle\n";
cin>>angle1;
cout<<"\nEnter the secong angle of triangle\n";
cin>>angle2;
cout<<"\nEnter the third angle of triangle\n";
cin>>angle3;
sum= angle1+angle2+angle3;
if (sum==180)
cout<<"\nThe triangle is valid\n";
else
cout<<"\nThe triangle is invalid";
getch();
}
```

Program 18

```
#include<iostream.h>
#include<conio.h>
void main()
{
int ali,asad,abbas;
cout<<"Enter the age of ali\n";
cin>>ali;
cout<<"Enter the age of asad\n";
cin>>asad;
cout<<"Enter the age of abbas\n";
cin>>abbas;

if (ali>asad)
{
if (ali>abbas)
cout<<"\nAge of Ali is the greatest of all\n";
else
cout<<"Age of Abbas is the greatest of all\n";
```

```
}
else
{
if (asad>abbas)
cout<<"\nAge of Asad is the greatest of all\n";
else
cout<<"\nAge of Abbas is the greatest of all\n";
}
getch();
}
```

Program 19

```
#include<iostream.h>
#include<conio.h>
void main()
{
float percentage;
cout<<"Enter the percentage obtained by student\n";
cin>>percentage;
if (percentage>=80)
cout<<"\nThe student got A+ grade";
else if (percentage<80 && percentage>=70)
cout<<"\nThe student got A grade";
else if (percentage<70 && percentage>=60)
cout<<"\nThe student got B grade";
else if (percentage<60 && percentage>=50)
cout<<"\nThe student got C grade";
else if (percentage<50 && percentage>=40)
cout<<"\nThe student got D grade";
else
```

```
cout<<"\nThe student got F grade and is fail";
getch();
}
```

Program 20

```
#include<iostream.h>
#include<conio.h>
void main()
{
int age;
char martial_status,gender;
cout<<"Enter the martial status of the driver\n";
martial_status=getche();
cout<<"\nEnter the gender of the driver\n";
gender=getche();
cout<<"\nEnter the age of the driver\n";
cin>>age;

if
(martial_status=='M'||(martial_status=='U'&&gender=='M'&
&age>30)||(martial_status=='U'&&gender=='F'&&age>25))
cout<<"\nThe driver will be insured";
else
cout<<"\nThe driver will not be insured";
```

```
getch();
}
```

Program 21

```
#include<iostream.h>
#include<conio.h>
void main()
{
int choice;
float num1,num2,result;
cout<<"Enter the first number\n";
cin>>num1;
cout<<"\nEnter the second number\n";
cin>>num2;
cout<<"\n1. Press 1 to add the numbers\n";
cout<<"2. Press 2 to do subtraction operation\n";
cout<<"3. Press 3 to multiply the numbers\n";
cout<<"4. Press 4 to do division operation\n";
cin>>choice;
switch (choice)
{
case 1:
result=num1+num2;
cout<<"\nThe addition of numbers is equal to "<<result;
break;
```

```
case 2:
result=num1-num2;
cout<<"\nThe subtraction of numbers is equal to "<<result;
break;
case 3:
result=num1*num2;
cout<<"\nThe multiplication os numbers is equal to "<<result;
break;
case 4:
result=num1/num2;
cout<<"\nThe division of the numbers is equal to "<<result;
break;
default:
cout<<"\nPlease enter the choice between 1 to 4. Try again";
}
getch();
}
```

Program 22

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a;
for (a=0;a<5;a++)
{
cout<<"Welcome to c++ programming\n";
}
getch();
}
```

Program 23

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a;
for (a=0;a<=10;a++)
{
cout<<a<<endl;
}
getch();
}
```

Program 24

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a,num,start,end;
cout<<"Enter the number to generate it's table\n";
cin>>num;
cout<<"\nEnter the start\n";
cin>>start;
cout<<"\nEnter the end\n";
cin>>end;
for (a=start;a<=end;a++)
{
cout<<"\n"<<num<<"*"<<a<<"="<<num*a<<endl;
}
getch();
}
```

Program 25

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a;
a=1;
while (a<=5)
{
cout<<a<<endl;
a++;
}
getch();
}
```

Program 26

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a,end,number;
cout<<"Enter the number to generate its table\n";
cin>>number;
cout<<"\nEnter the start\n";
cin>>a;
cout<<"\nEnter the end\n";
cin>>end;

while (a<=end)
{
cout<<"\n"<<number<<" * "<<a<<" = "<<number*a<<endl;
a++;
}
getch();
}
```

Program 27

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a,start,end;
cout<<"Enter the starting number\n";
cin>>start;
a=start;
cout<<"\nEnter the ending number\n";
cin>>end;
do{
cout<<a<<endl;
a=a+2;
}while (a<=end) ;
getch();
}
```

Program 28

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number,a,start,end;
cout<<"Enter the number to generate its table\n";
cin>>number;
cout<<"\nEnter the starting number\n";
cin>>start;
a=start;
cout<<"\nEnter the ending number\n";
cin>>end;
do{
cout<<"\n"<<number<<" * "<<a<<" = "<<number*a<<endl;
a=a++;
}while (a<=end) ;
getch();
}
```

Program 29

```
#include<iostream.h>
#include<conio.h>
void main()
{
int num1,num2,sum;
char option='y';
while (option=='y'||option=='Y')
{
clrscr();
cout<<"Enter your first number\n";
cin>>num1;
cout<<"\nEnter your second number\n";
cin>>num2;
sum=num1+num2;
cout<<"\nThe sum is equal to "<<sum;
cout<<"\nDo you wish to continue?\n Press Y for yes and N for no\n";
option=getche();
}
cout<<"\nThe program will terminate now...";
getch();
}
```

Program 30

```
#include<iostream.h>
#include<conio.h>
void main()
{
float num1,num2,result;
char option;
int choice;
do{
clrscr();
cout<<"Enter your first number\n";
cin>>num1;
cout<<"\nEnter your second number\n";
cin>>num2;
cout<<"\n1. ******Press 1 for addition******\n";
cout<<"\n2. ******Press 2 for subtraction******\n";
cout<<"\n3. ******Press 3 for multiplication******\n";
cout<<"\n4. ******Press 4 for division******\n";
cin>>choice;
switch (choice)
{
case 1:
result=num1+num2;
cout<<"\nThe result is equal to "<<result;
```

```
break;
case 2:
result=num1-num2;
cout<<"\nThe result is equal to "<<result;
break;
case 3:
result=num1*num2;
cout<<"\nThe result is equal to "<<result;
break;
case 4:
result=num1/num2;
cout<<"\nThe result is equal to "<<result;
break;
default:
cout<<"\nIncorrect option\n";
}
cout<<"\nDo you wish to continue?\n Press Y for yes and N for no\n";
option=getche();
}while (option=='y'||option=='Y')  ;
cout<<"\nGood bye";
getch();
}
```

Program 31

```
#include<iostream.h>
```

```
#include<conio.h>
void main()
{
int i;
int sum=0;
for (i=1;i<=10;i++)
{
sum=sum+i;
}cout<<"The sum of series is equal to "<<sum<<endl;

cout<<"\nThe program will terminate now... ";
getch();
}
```

Program 32

```
#include<iostream.h>
#include<conio.h>
void main()
{
int i,start,end;
unsigned long int factorial=1;
cout<<"Enter the start \n";
cin>>start;
cout<<"\nEnter the end\n";
cin>>end;
for (i=start;i<=end;i++)
{
factorial=factorial*i;
}
cout<<"The factorial is equal to "<<factorial;
getch();
}
```

Program 33

```
#include<iostream.h>
#include<conio.h>
void main()
{
int i,number;
unsigned long int fact=1;
cout<<"Enter the number to calculate factorial \n";
cin>>number;
if (number<0)
{
cout<<"\nFactorial of negative number can not be calculated";
}
else if (number==0||number==1)
{
cout<<"\nThe factorial is 1";}
else
{
for (i=2;i<=number;i++)
{
fact=fact*i;}
cout<<"The factorial is equal to "<<fact;}
getch();}
```

Program 34

```
#include<iostream.h>
#include<conio.h>
void main()
{
int i;
float sum=0;
for (i=1;i<=5;i++)
{
sum=sum+(1.0/i);
}
cout<<"The sum of series is equal to "<<sum;
getch();
}
```

Program 35

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number;
int sum=0;
int counter;
cout<<"Enter the number to find the sum of its series\n";
cin>>number;
for (counter=1;counter<=number;counter++)
{
if (counter%2==0)
{
sum=sum-counter;    }
else
{
sum=sum+counter;
}}
cout<<"\nThe sum of series is equal to "<<sum;
cout<<"\nThe program will terminate now";
getch();
}
```

Program 36

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number,sum=0,counter;
cout<<"Enter the number to find its series\n";
cin>>number;
for (counter=1;counter<=number;counter++)
{
sum=sum+(counter*(counter+1)*(counter+2));
}
cout<<"\nThe sum of series is equal to "<<sum;
cout<<"\nThe program will terminate now";
getch();
}
```

Program 37

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number;
int zero=0,positive=0,negative=0;
char choice='Y';
while(choice=='Y'||choice=='y')
{
clrscr();
cout<<"Enter any integer value\n";
cin>>number;
if (number==0)
zero++;
else if (number>0)
positive++;
else
negative++;
```

```
 cout<<"\nDo U wish to continue,Press Y or if don't Press N\n";
    choice=getche();
   }
   cout<<"\nThe number of the positive integers are "<<positive;
   cout<<"\nThe number of the negative integers are "<<negative;
cout<<"\nThe number of the zeros are "<<zero;
                        getch();
                        }
```

Program 38

```
#include<iostream.h>
#include<conio.h>
void main()
{
int number,counter;
float sum;
cout<<"Enter the number to get the sum of series\n";
cin>>number;
for (counter=1;counter<=number;counter++)
{
sum=sum+(1.0/(counter*counter));
}
cout<<"\nThe sum of the series is equal to "<<sum;
                getch();
                }
```

Program 39

```
#include<iostream.h>
#include<conio.h>
#include<math.h>
void main()
{
int number;
int counter;
float sum=0;
cout<<"Enter the number to get the sum of series\n";
cin>>number;
for (counter=1;counter<=number;counter++)
{
sum= sum+(1.0/pow(counter,counter));
}
cout<<"\nThe sum of the series is equal to "<<sum;
                getch();
                }
```

Program 40

```
#include<iostream.h>
#include<conio.h>
void main()
{
int fact=1;
int number;
int counter;
float sum=0;
cout<<"Enter the number to get the sum of series\n";
cin>>number;
for (counter=1;counter<=number;counter++)
{
fact=fact*counter;
sum= sum+(1.0/fact);
}
cout<<"\nThe sum of the series is equal to "<<sum;
                getch();
                }
```

Program 41

```
#include<iostream.h>
#include<conio.h>
void main()
{
int i,j;
for(i=0;i<=9;i++)
{
for (j=0;j<=9;j++)
{
cout<<i<<j<<" ";
}
cout<<endl;
}
                getch();
                }
```

Program 42

```
#include<iostream.h>
#include<conio.h>
void main()
{
int N=5;
int M=1;
for(int i=0;i<=N;i++)
{
for (int j=0;j<=M;j++)
{
cout<<j<<" ";
}
cout<<endl;  M++;
}
getch();
}
```

Program 43

```
#include<iostream.h>
#include<conio.h>
void Sum();
void main()
{
cout<<"User defined function will be called\n";
Sum();
cout<<"\nExecution of program returned to main function\n";
getch();
}
void Sum()
{
int a,b,c;
cout<<"\nEnter the first value\n";
cin>>a;
cout<<"\nEnter the second number\n";
cin>>b;
c=a+b;
cout<<"\nSum is equal to "<<c;
}
```

Program 44

```
#include<iostream.h>
#include<conio.h>
void Sum(int,int);
void main()
{
cout<<"User defined function will be called\n";
Sum(25,35);
cout<<"\nExecution of program returned to main function\n";
getch();
}
void Sum(int a,int b)
{
int c;
c=a+b;
cout<<"\nSum is equal to "<<c;
}
```

Program 45

```
#include<iostream.h>
#include<conio.h>
void sum(int,int);
void main()
{
int a,b;
cout<<"User defined function will be called\n";
cout<<"Enter 1st value\n";
cin>>a;
cout<<"\nEnter the 2nd value\n";
cin>>b;
sum(a,b);
cout<<"\nExecution of program returned to main function\n";
cout<<"\nEnter 1st value\n";
cin>>a;
cout<<"\nEnter 2nd value\n";
cin>>b;
sum(a,b);
getch();
}
void sum(int a,int b)
{
int c;
c=a+b;
cout<<"\nSum is equal to "<<c;
}
```

Program 46

```
#include<iostream.h>
#include<conio.h>
int sum(int,int);
void main()
{
int a,b,c;
cout<<"Enter 1st value\n";
cin>>a;
cout<<"\nEnter 2nd value\n";
cin>>b;
cout<<"\nUser defined function will be called ";
c=sum(a,b) ;
cout<<"\nThe sum is equal to "<<c;
cout<<"\nExecution of program returned to main function\n";
cout<<"\nEnter 1st valude\n";
cin>>a;
cout<<"\nEnter 2nd value\n";
cin>>b;
c=sum(a,b);
cout<<"\nThe sum is equal to "<<c;
getch();                }
int sum(int a,int b)
{       int c;
c=a+b;
return c;
}
```

Program 47

```
#include<iostream.h>
#include<conio.h>
void myfunction(int);
void main()
{
int a=5;
myfunction(a);
cout<<"Value of \"a\" after the function call "<<a;
getch();
}
void myfunction(int b)
{
b=54;
}
```

Program 48

```
#include<iostream.h>
#include<conio.h>
void myfunction();
void main()
{
int a=11;
int b=44;
int c=40;
cout<<"The value of variable d is"<<d;
myfunction();
getch();
}
void myfunction()
{
int d=88;
cout<<"\nThe value of variable a \n"<<a;
cout<<"\nThe value of variable b\n"<<b;
cout<<"\nThe value of variable c\n"<<c;
}
```

Program 49

```
#include<iostream.h>
#include<conio.h>
unsigned long int calculatefact(int);
void main()
{
int number;
unsigned long int fact;
cout<<"Enter a number to find its factorial\n";
cin>>number;
fact=calculatefact(number);
cout<<"\nFactorial of "<<number<<" is "<<fact;
getch();
}
unsigned long int calculatefact (int a)
{
unsigned long int f=1;
int i;
for(i=1;i<=a;i++)
{
f=f*i;
}
return f;
}
```

Program 50

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a=7;
cout<<"Value of variable a is ="<<a;
cout<<"\nAddress of variable a is = "<<&a;
getch();
}
```

Program 51

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a=5;
int *p;
p=&a;
cout<<"Value of variable a = "<<a;
cout<<"\nValue of variable a = "<<*p;
cout<<"\nValue of variable a = "<<*(&a);
cout<<"\nAddress of variable a = "<<&a;
cout<<"\nAddress of variable a = "<<p;
getch();
}
```

Program 52

```
#include<iostream.h>
#include<conio.h>
void main()
{
int a=5;
int *p;
p=&a;
cout<<"The value of a="<<*p;
*p=20;
cout<<"\nThe new value of a through pointer ="<<*p;
getch();
}
```

Program 53

```
#include<iostream.h>
#include<conio.h>
void swap(int,int);
void main()
{
int firstnumber=4;
int secondnumber=5;
cout<<"Value of the first number before swapping ="<<firstnumber;
cout<<"\nValue of the second number before swapping = "<<secondnumber;
swap (firstnumber,secondnumber);
cout<<"\nValue in the variable first number after swapping is "<<firstnumber;
cout<<"\nValue in the variable second number after swapping is "<<secondnumber;
getch();
}
void swap(int a,int b)
{
int temp;
cout<<"\nThe value of variable first number accessed from swap a ="<<a;
cout<<"\nThe value of variable second number accessed from swap b ="<<b;
temp=a;
a=b;
b=temp;
cout<<"\nValue of a after swapping = "<<a;
cout<<"\nValue of b after swapping = "<<b;
}
```

Program 54

```
#include<iostream.h>
#include<conio.h>
void swap(int*,int*);
void main()
{
int firstnumber=4;
int secondnumber=5;
cout<<"Value of the first number before swapping ="<<firstnumber;
cout<<"\nValue of the second number before swapping = "<<secondnumber;
swap (&firstnumber,&secondnumber);
cout<<"\nValue in the variable first number after swapping is "<<firstnumber;
cout<<"\nValue in the variable second number after swapping is "<<secondnumber;
getch();
}
void swap(int*a,int*b)
{
int temp;
cout<<"\nThe value of variable first number accessed from swap a ="<<*a;
cout<<"\nThe value of variable second number accessed from swap b ="<<*b;
temp=*a;
*a=*b;
*b=temp;
cout<<"\nValue of a after swapping = "<<*a;
cout<<"\nValue of b after swapping = "<<*b;
}
```

Program 55

```
#include<iostream.h>
#include<conio.h>
#include<math.h>
void calculatevalue(float*,float*,float*);
void main()
{
float radius,area,perimeter;
cout<<"Enter the radius of the circle to calculate its area and perimeter\n";
cin>>radius;
calculatevalue (&radius,&perimeter,&area);
cout<<"\nThe area of circle is equal to "<<area;
cout<<"\nThe perimeter is equal to "<<perimeter;
getch();
}
void calculatevalue (float*rad,float*p,float*a)
{
float const PI=3.14159;
*p=2*(*rad)*PI;
*a=PI*(*rad)*(*rad);
*a=PI*(* rad)*(* rad);
}
```

Second Semester

Program 56

```
#include<iostream.h>
#include<conio.h>
void main()
{
int arr[5] = {20,10,0,15,5};
cout<<"The value of arr at location 0 is = "<<arr[0]<<endl;
cout<<"The value of arr at location 1 is = "<<arr[1]<<endl;
cout<<"The value of arr at location 2 is = "<<arr[2]<<endl;
cout<<"The value of arr at location 3 is = "<<arr[3]<<endl;
cout<<"The value of arr at location 4 is = "<<arr[4]<<endl;
getch();
}
```

Program 57

```
#include<iostream.h>
#include<conio.h>
void main()
{
int arr[5];
cout<<"Enter the value of array in location 0\n";
cin>>arr[0];
cout<<"\nEnter the value of array in location 1\n";
cin>>arr[1];
cout<<"\nEnter the value of array in location 2\n";
cin>>arr[2];
cout<<"\nEnter the value of array in location 3\n";
cin>>arr[3];
cout<<"\nEnter the value of array in location 4\n";
cin>>arr[4];
cout<<"\nThe value at location 0 "<<arr[0]<<endl;
cout<<"\nThe value at location 1 "<<arr[1]<<endl;
cout<<"\nThe value at location 2 "<<arr[2]<<endl;
cout<<"\nThe value at location 3 "<<arr[3]<<endl;
cout<<"\nThe value at location 4 "<<arr[4]<<endl;
getch();
}
```

Program 58

```
#include<iostream.h>
#include<conio.h>
void main()
{
int arr[5];
int sum=0;
int counter;
for (counter=0;counter<=4;counter++)
{
cout<<"Enter the value of arr at location "<<counter<<endl;
cin>>arr[counter];
sum=sum+arr[counter];
}
for (counter=0;counter<=4;counter++)
{
cout<<"The value of arr at location "<<counter<<" is = "<<arr[counter]<<endl;
}
cout<<"\nThe sum is equal to "<<sum;
getch();
}
```

Program 59

```
#include<iostream.h>
#include<conio.h>
void main()
{
float marks[5],average;
int sum=0;
int counter;
for (counter=1;counter<=5;counter++)
{
cout<<"Enter the marks of subject "<<counter<<endl;
cin>>marks[counter];
sum=sum+marks[counter];
}
average=sum/5;
cout<<"\nThe sum is equal to "<<sum;
cout<<"\nThe average marks is "<<average;
getch();
}
```

```
#include<iostream.h>
```

Program 60

```
#include<iostream.h>
#include<conio.h>
void main()
{
int arr[5];
int *p=&arr[0];
int counter;
for (counter=0;counter<=4;counter++)
{
arr[counter]=counter;
}
for (int i=0;i<=4;i++)
{
cout<<"The value at index "<<i<<" is = "<<arr[i]<<endl;
cout<<"The address of index "<<i<<" is equal to "<<p<<endl;
p++;
}
getch();
}
```

Program 61

```
#include<iostream.h>
#include<conio.h>
void myftn(int*);
void main()
{
int arr[5];
int counter;
for (counter=0;counter<5;counter++)
{
cout<<"Enter the value at index "<<counter<<endl;
cin>>arr[counter];
}
myftn(arr);
for (counter=0;counter<5;counter++)
{
cout<<"\nThe new value at index "<<counter<<" = "<<arr[counter];
}
getch();
}
void myftn(int*array)
{
int i;
for (i=0;i<5;i++)
{
*array =*array*3;
array++;
}
}
```

Program 62

```
#include <iostream>
using namespace std;
int main()
{
   int myarray[3][2]={{10,5},{30,55},{65,77}};
   cout <<myarray[0][0] << endl;
      cout <<myarray[0][1] << endl;
   cout <<myarray[1][0] << endl;
   cout <<myarray[1][1] << endl;
   cout <<myarray[2][0] << endl;
   cout <<myarray[2][1] << endl;
   return 0;
}
```

Program 63

```
#include <iostream>

using namespace std;

int main()
{
   int myarray[3][2];
   for (int i=0; i<=2; i++)
   {
      for(int j=0; j<=1; j++)
      {
         cout<<"Enter the value at location "<<i<<" , "<<j<<endl;
         cin>>myarray[i][j];
      }
   }
   for (int i=0; i<=2; i++)
   {
      for(int j=0; j<=1; j++)
      {
         cout<<"The value at location "<<i<<" , "<<j<<" is "<<myarray[i][j]<<endl;
      }
   }

   return 0;
}
```

Program 64

```
#include <iostream>

using namespace std;

int main()
{
   int myarray[3][2];
   int sum=0;
   for (int i=0; i<=2; i++)
   {
      for(int j=0; j<=1; j++)
      {
         cout<<"Enter the value at location "<<i<<" , "<<j<<endl;
         cin>>myarray[i][j];
         sum=sum+myarray[i][j];

      }
   }
   cout<<"\nThe sum of all the elements of the array is equal to "<<sum;

   return 0;
}
```

Program 65

```
#include <iostream>
using namespace std;
int main()
{
   int myarray[3][2];
   int smallest,largest;
   for (int i=0; i<=2; i++)
   {
      for(int j=0; j<=1; j++)
      {
         cout<<"Enter the value at location "<<i<<" , "<<j<<endl;
         cin>>myarray[i][j];
      }
   }
   smallest=myarray[0][0];
   largest=myarray[0][0];
   for (int i=0; i<=2; i++)
   {
      for(int j=0; j<=1; j++)
      {
      if (smallest>myarray[i][j])
      smallest=myarray[i][j];
      if (largest<myarray[i][j])
      largest=myarray[i][j];
      }
   }
   cout<<"\nThe largest value in the array is equal to "<<largest;
   cout<<"\nThe smallest value in the array is equal to "<<smallest;
   return 0;
}
```

Program 66

```
#include <iostream>
#include<math.h>
using namespace std;
int main()
{
   int myarray[3][3];
   int sum=0;
   float result=0;
   for (int i=0; i<3; i++)
   {
      for(int j=0;j<3;j++)
      {
         cout<<"Enter the value at location "<<i<<" , "<<j<<endl;
         cin>>myarray[i][j];
      }
   }
   for (int i=0; i<=2; i++)
   {
      for(int j=0;j<3;j++)
      {
     sum=sum+pow(myarray[i][j],2);
      }
   }
   result=sqrt(sum);

   cout<<"\nThe norm of your array is "<<result;
   return 0;
}
```

Program 67

```
#include<iostream>
 int factorial (int);
 using namespace std;
 int main()
{
    int number,result;
    cout<<"Enter your non-negative number to calculate its factorial\n";
    cin>>number;
    result=factorial(number);
    cout<<"\nThe factorial of "<<number<<" is equal to "<<result;
    return 0;
}
 int factorial(int n)
{
    if (n>1)
    {
       return n* factorial(n-1);
    }
    else
    {
       return 1;
    }
}
```

Program 68

```
#include<iostream>
 #include<string>
 using namespace std;
 struct student
 {
    string Student_Name;
  int rollnumber;
  int age;
  char year; //'F','J','S'
 };
 int main()
 {
    student s1;//student typr variable declaration
  cout<<"Enter the name of the student \n ";
  getline(cin,s1.Student_Name);
  cout<<"\nENter the age of the student\n";
  cin>>s1.age;
  cout<<"\nEnter the roll number of the student\n";
  cin>>s1.rollnumber;
  cout<<"\nEnter the year of student\nF for Freshman\nJ for Junior\nS for Senior\n ";
  cin>>s1.year;
cout<<"\nThe Name of the student is "<<s1.Student_Name;
cout<<"The age of student is equal to "<<s1.age;
cout<<"\nTHe roll number of the student is "<<s1.rollnumber;
cout<<"\nThe year of student s1 ="<<s1.year;


  return 0;
 }
```

Program 69

```
[[[#include<iostream>        #include<string>
 using namespace std;
 void print_details(struct student *);
void store_values(struct student *,string,int,int,char);
struct student
 {
  string Student_Name;              int rollnumber;              int age;        char year; //'F','J','S'
 };
 int main()
 { string s;         int a,r;         char y;
    student s1;//student type variable declaration
   cout<<"Enter the name of the student \n ";
   getline(cin,s);
   cout<<"\nENter the age of the student\n";                    cin>>a;
   cout<<"\nEnter the roll number of the student\n";           cin>>r;
   cout<<"\nEnter the year of student\nF for Freshman\nJ for Junior\nS for Senior\n ";
   cin>>y;
   store_values(&s1,s,a,r,y);              print_details(&s1);
   return 0;              }
 void print_details(struct student*ptr)
 {
cout<<"\nThe Name of the student is "<<ptr->Student_Name;
cout<<"\nThe age of student is equal to "<<ptr->age;
cout<<"\nTHe roll number of the student is "<<ptr->rollnumber;
cout<<"\nThe year of student s1 ="<<ptr->year;
 }
 void store_values(struct student *p,string s,int a,int r, char y)
 {
    p->Student_Name=s;      p->age=a;        p->rollnumber=r;         p->year=y;
 }
```