Q.1 Find the sum of first 10 natural numbers.

```
#include <stdio.h>
int main()
{
   int i,n=10,sum;
   printf("Sum of 1st 10 natural naumber is:");
   for(i=1;i<=n;i++)
   {
      sum=sum+i;
   }
   printf("%d\n",sum);
   return 0;
```

```
Sum of 1st 10 natural naumber is:55
```

Q.2 Display the multiplication table of a given integer.

```
#include <stdio.h>
int main(){
   int n,i=1;
   printf("Enter the value of n:");
   scanf("%d",&n);
   while(i<=10){
      printf("%d x %d=%d\n",n,i,n*i);
      i++;
   }
   return 0;
}
```

```
Enter the value of n:2
2 x 1=2
2 x 2=4
2 x 3=6
2 x 4=8
2 x 5=10

2 x 6=12
2 x 7=14
2 x 8=16
2 x 9=18
2 x 10=20
```

Q.3 Display the n terms of odd natural number and their sum.

```
#include <stdio.h>

int main(){

    int n,i=1,sum;

    printf("Enter the value for n:");

    scanf("%d",&n);

        do {

            if(i%2!=0){

                sum=sum+i;

            }

            i++;

        }

        while(i<=n);

    printf("The sum of n terms odd number is:%d\n",sum);

    return 0;

}
```

```
Enter the value for n:10
The sum of n terms odd number is:25
```

Q.4 Display the pattern like right angle triangle

*

**

***

****

```
include <stdio.h>
int main()
{
   int i,j,n;
   printf("Enter the value for n:");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
   {
      for(j=1;j<=i;j++)
      {
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

```
Enter the value for n:4
*
**
***
****
```

Q.5 Display the pattern like right angle triangles.

1

2 3

4 5 6

7 8 9 10

```
#include <stdio.h>
int main(){
int n,i=1,j,k=1;
        printf("Please Enter the Number of Rows:");
        scanf("%d", &n);
        while ( i <= n){
                j = 1;
        while ( j <= i ) {
        printf(" %d ",k++);
        j++;
        }
        i++;
        printf("\n");
        }
        return 0;
}
```

```
Please Enter the Number of Rows:4
 1
 2  3
 4  5  6
 7  8  9  10
```

Q.6 Make such a pattern like a pyramid with numbers

1

2 3

4 5 6

7 8 9 10

```
#include <stdio.h>
int main(){
    int i=1,j,k,n,t=1,g;
    printf("Enter the value for n:");
    scanf("%d",&n);
    g=n+4-1;
    do
    {
        for(k=g;k>=1;k--){
            printf(" ");
        }
        for(j=1;j<=i;j++)
            printf("%d",t++);
        printf("\n");
        g--;
        i++;
    }
    while(i<=n);
    return 0;
}
```

```
Enter the value for n:4
   1
  23
 456
78910
```

Q.7 Display Pascal's triangle

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

```
#include <stdio.h>
int main(){
   int n,i,j,k=1,s;
   printf("Enter the value for n:");
   scanf("%d",&n);
   for(i=0;i<n;i++) {
      for(s=1;s<=n-i;s++)
         printf(" ");
      for(j=0;j<=i;j++) {
         if(j==0 || i==0)
            k=1;
         else
            k=k*(i-j+1)/j;
         printf("%4d",k);
      }
      printf("\n");
   }
   return 0;
}
```

```
Enter the value for n:5
      1
    1   1
  1   2   1
1   3   3   1
1   4   6   4   1
```

Q.8 Display the first n terms of Fibonacci series

```
#include <stdio.h>

int main() {

   int i,n,a=0,b=1,temp;

   printf("Enter the value for n:");

   scanf("%d", &n);

   printf("Fibonacci Series:");

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

      printf("%d, ",a);

      temp=a+b;

      a=b;

      b=temp;

   }

   return 0;

}
```

```
Enter the value for n:10
Fibonacci Series:0, 1, 1, 2, 3, 5, 8, 13, 21, 34
```

Q.9 Check whether a given number is a perfect number or not.

```
#include <stdio.h>

int main() {

   int i=1,n,sum=0;

   printf("Enter the value for n:");
```

```
    scanf("%d",&n);
    while(i<=n/2) {
        if(n%i==0) {
            sum=sum+i;
        }
        i++;
    }
    if(sum==n)
        printf("%d is PERFECT NUMBER",n);
    else
        printf("%d is NOT PERFECT NUMBER",n);
    return 0;
}
```

```
Enter the value for n:-1
-1 is NOT PERFECT NUMBER
```

Q.10 Find the Armstrong number for a given range of number.

```
#include <stdio.h>
#include <math.h>
int main() {
    int a,b,n,on,rem,c=0;
    double res=0.0;
    printf("Enter 2 number:");
    scanf("%d %d", &a,&b);
    printf("Amstrong number between %d to %d are:",a,b);
    for(n=a+1;n<b;++n)
    {
```

```
        on=n;
        while(on!=0)
        {
           on=on/10;
           ++c;
        }
        on=n;
        while(on!=0)
        {
           rem=on % 10;
           res=res+ pow(rem, c);
           on=on/10;
        }
        if(res==n)
           printf("%d ",n);
        c=0;
        res=0;
    }
    return 0;
}
```

```
Enter 2 number:200 2000
Amstrong number between 200 to 2000 are:370 371 407 1634
```

Q.11 Determine whether a given number is prime or not.

```
#include <stdio.h>
int main() {
    int n,i=2,flag=0;
```

```
    printf("Enter the value for n:");
    scanf("%d",&n);
    while(i<=n/2) {
        if(n%i==0)  {
            flag=1;
            break;
        }
        ++i;
    }
    if(n==1)  {
        printf("1 is neither prime nor composite");
    }
    else
    {
        if(flag==0)
            printf("%d is a prime number",n);
        else
            printf("%d is not a prime number",n);
    }
    return 0;
}
```

```
Enter the value for n:29
29 is a prime number
```

Q.12 Display the number in reverse order

```
#include <stdio.h>
int main() {
```

```
    int n,r=0;
    printf("Enter the number:");
    scanf("%d",&n);
    do {
        r=r*10;
        r=r+n%10;
        n=n/10;
    }
    while(n!=0);
    printf("Reverse of the number is:%d\n",r);
    return 0;
}
```

```
Enter the number:3456
Reverse of the number is:6543
```

Q.13 Display the sum of the series [9 + 99 + 999 + 9999..]

```
#include <stdio.h>
void main()
{
    long int n,i,t=9;
    int sum=0;
    printf("Enter the value of n:");
    scanf("%d", &n);
    for(i=1;i<=n;i++)
    {
        sum=sum+t;
        printf("%ld ",t);
```

```
    t=t*10+9;
  }
  printf("\nsum of the series:%d\n",sum);
}
```

```
Enter the value of n:5
9 99 999 9999 99999
sum of the series:111105
```

Q.14 find the sum of the series{1-X^2/2!+X^4/4!-...]

```
#include <stdio.h>
void main()
{
  float x,sum,t,d;
  int i=1,n;
  printf("Enter the value for x:");
  scanf("%f", &x);
  printf("Enter the value for n:");
  scanf("%d",&n);
  sum=1;
  t=1;
  while(i<n)
  {
    d=(2*i)*(2*i-1);
    t=-t*x*x/d;
    sum=sum+t;
    i++;
  }
```

```
    printf("the sum= %f\n Value of n= %d\n Value of X=%.2f\n",sum,n,x);
}
```

```
Enter the value for x:2
Enter the value for n:5
the sum= -0.415873
 Value of n= 5
 Value of X=2.00
```

Q.15 find the sum of the series [x-x^3+x^5+...]

```
#include <stdio.h>
#include <math.h>
void main()
{
    int x,sum,ctr,i=1,n,m,mm,nn;
    printf("Enter the value for x:");
    scanf("%d",&x);
    printf("Enter the value for n:");
    scanf("%d",&n);
    sum=x;
    m=-1;
    printf("The value of the series:\n");
    printf("%d\n",x);
    do
    {
        ctr=(2*i+1);
```

```
        mm=pow(x,ctr);
        nn=mm*m;
        printf("%d\n",nn);
        sum=sum+nn;
        m=m*(-1);
        i++;
    }
    while(i<n);
    printf("\n The sum=%d\n",sum);
}
```

```
Enter the value for x:2
Enter the value for n:5
The value of the series:
2
-8
32
-128
512

 The sum=410
```

Q.18 Display the pattern like diamond.

```
#include <stdio.h>
int main()
{
    int i,j,n;
    printf("Enter number of rows\n:");
    scanf("%d",&n);
```

```
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=n-i;j++)
            printf(" ");
        for(j=1;j<=2*i-1;j++)
            printf("*");
        printf("\n");
    }
    for(i=1;i<=n-1;i++)
    {
        for(j=1;j<=i;j++)
            printf(" ");
        for(j=1;j<=2*(n-i)-1;j++)
            printf("*");
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows
:5
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *
```