Assignment → 5

(1)
```
#include <stdio.h>
void main ()
{
    int j, sum = 0;
    Printf ("The first 10 natural number is : \n");
    for ( j = 1 ; j <= 10 ; j++ )
    {
      sum = sum + j ;
      Printf ("%d", j );
    {
    Printf ("\n The sum is : %d \n", sum );
}
```

output :

The first 10 natural number is :

1 2 3 4 5 6 7 8 9 10

The sum is : 55

(2)
```
#include <stdio.h>
void main ()
{
  int n, i;
  printf ("enter a Number");
  scanf ("%d", &n);
  i = 1;
  while ( i <= 10 )
  {
    Printf ("%d * %d = %d \n", n, i, n * i);
      ++i;
  }
  getch ();
}
```

Output :

Enter a Number

2

2 * 1 = 2

2 * 2 = 4

2 * 3 = 6

2 * 4 = 8

2 * 5 = 10

2 * 6 = 12

2 * 7 = 14

2 * 8 = 16

2 * 9 = 18

2 * 10 = 20.

(3)

```
#include <stdio.h>
#include <conio.h>
void main()
{
  int num, i, sum = 0;
  printf("enter a number \n");
  scanf("%d", &num);
  i = 0;
  do
  {
    if ((i%2) == 0)
    i++;
    else
    {
      sum = sum + i;
    i++;
  }
} while (i<=num);
printf("Sum of odd number %d", sum);
getch();
}
```

output :

Enter a number 5

Sum of odd number 9

(4)
```
#include <stdio.h>
void main ( )
{
  int i, j, rows;
  printf ("Input number of rows :");
  scanf ("%d", &rows);
  for (i=1 ; i<= rows ; i++);
  {
    for (j = 1 ; j <= i ; j++)
      printf ("*");
    Printf ("\n");
  }
}
```

Output : Input number of rows: 4

```
*
* *
* * *
* * * *
```

(5)
```
#include <stdio.h>
void main ( )
{
  int i, j, rows , k=1 ;
  printf ("Input number of rows : ");
  scanf ("%d" , &rows);
  for ( i=1 ; i<= rows ; i++)
  {
    for (j = 1 ; j <= i ; j++)
      printf ("%d", k++) ;
    Printf ("\n");
  }
}
```

Output:

```
1
2 3
4 5 6
7 8 9 10
```

```
#include <stdio.h>
int main()
{
    int i, j, k;
    k = 1;
    for (i = 1; i <= 5; i++)
    {
        for (j = 1; j <= i; j++)
        {
            printf("%d ", k++);
        }
        printf("\n");
    }
    return 0;
}
```

Output:

```
1
2 3
4 5 6
7 8 9 10
```

(2)

```
#include <stdio.h>
void main()
{
    int no_row, c = 1, blk, i, j;
    printf("Input number of rows:");
    scanf("%d", &no_row);
    for (i = 0; i < no_row; i++)
    {
```

```
for (blk = 1; blk <= no_row-i; blk++)
printf (" ");
for (j = 0; j <= i; j++)
{
  if (j == 0 || i == 0)
    c = 1;
  else
    c = c * (i-j+1) / j;
  printf ("%4d", c);
}
printf ("\n");
}
```

Output :

```
          1
        1   1
      1   2   1
    1   3   3   1
  1   4   6   4   1
```

(8)

```
#include <stdio.h>
int main ()
{
  int i, n, t1 = 0, t2 = 1, nextTerm;
  printf ("Enter the number of terms:");
  scanf ("%d", &n);
  printf ("Fibonacci Series:");
for (i=1; i<=n; ++i)
{
  Printf ("%d, ", t1);
  nextTerm = t1 + t2;
  t1 = t2;
  t2 = nextTerm;
}
return 0;
}
```

Output:

Enter the number of terms : 10.
Fibonacci series : 0, 1, 1, 2, 3, 5, 8, 13, 21, 34

(9)
```
#include <stdio.h>
int main
{
  int num, count = 1, sum = 0;
  printf ("Enter a number \n");
  scanf ("%d", &num);
  while (count < num)
  {
    if (num % count == 0)
    {
      sum = sum + count;
    }
    count ++;
  }
  if (sum == num)
  {
    printf ("\n %d is a perfect number\n",
            num);
  }
  else
  {
    Printf ("\n %d is not a perfect number
            \n", num);
  }
  return 0;
}
```

Output:

Enter a number

6

6 is a perfect number.

(10)
```
#include <stdio.h>
void main()
{
    int num, r, sum, temp;
    int strno, endno;
    printf("Input starting number of range:");
    scanf("%d", &strno);
    printf("Input ending number of range:");
    scanf("%d", &endno);
    printf("Armstrong numbers in given
            range are:");
    for (num= strno; num<= endno ; num++)
    {
        temp = num;
        sum = 0;
        while (temp != 0)
        {
            r = temp % 10;
            temp = temp / 10;
            sum = sum + (r * r * r);
        }
    if (sum == num)
        printf("%d", num);
    }
printf("\n");
}
```

Output :

Input starting number of range : 1
Input ending number of range : 1000
Armstrong numbers in given range

1 153 370 371 407

(11)

```
#include <stdio.h>
#include <conio.h>
#include <math.h>
void main()
{
  int n, i, flag = 0;
  clrscr();
  printf("\n Enter a positive integer
          value :");
  scanf("%d", &n);
  do
  {
    if (n != 2) && (n % i == 0)
    {
      flag = 1;
      break;
    }
    i++;
  } while (i <= sqrt(n));
  if (flag == 0)
    printf("\n %d is a prime number");
  else
    printf("\n %d is not a prime number");
  getch();
}
```

output :

Enter a positive integer value : 13
13 is a prime number.

(12)
```
#include <stdio.h>
int main ()
{
  int n, rev = 0, remainder ;
  Printf ( " enter an integer : " );
  Scanf ( "%d", &n );
  while ( n != 0 ) {
   remainder = n % 10 ;
   rev = rev * 10 + remainder ;
   n /= 10;
  }
  Printf ( " Reversed number = %d", rev );
  return 0;
}
```

Output : Enter an integer : 2345
Reversed number : 5432.

(13)
```
#include <stdio.h>
void main ()
{
  long int n, i, t = 9 ;
  int Sum = 0 ;
  printf ( "Input the number of terms : " );
  Scanf ( "%ld", &n );
  for ( i = 1 ; i <= n, i++ )
  {
    Sum += t
    Printf ( "%ld ", t );
```

```
    t = t * 10 + 9;
}
Printf ("\n The sum of the series %.d\n",
                                Sum);
}
```

Output:

Input the number of terms : 5

9 99 999 9999 99999

The sum of the series: 11105.

(14)

```
#include <stdio.h>
void main ()
{
  float x, Sum, t, d;
  int i, n;
  printf ("Input the value of x :");
  scanf ("%f", &x);
  printf ("Input the number of terms!");
  Scanf ("%d", &n);
  Sum = 1; t = 1;
  for (i=1; i<n; i++)
  {
  d = (2*i) * (2*i-1);
  t = -t * x * x / d;
  Sum = Sum + t;
  }
  Printf ("\n the Sum = %f \n Number of
          terms = %d \n value of x =
  %f \n", Sum, n, x)
```

Output: Input the value of x : 2

Input the number of terms : 5

the Sum = -0.411523

Number of terms = 5

value of x = 2.000000.

(15)
```
#include <stdio.h>
#include <math.h>
void main ()
{
    int x, sum, ctr;
    int i, n, m, mm, nn;
    printf ("Input the value of x : ");
    scanf ("%d", &x);
    printf ("Input number of terms : ");
    scanf ("%d" &n);
    sum = x; m = -1;
    printf ("The value of the series! \n");
    printf ("%d \n", x);
    for (i = 1; i < n; i++)
    {
        ctr = (2 * i + 1);
        mm = pow (x, ctr);
        nn = mm * m;
        printf ("%d \n", nn);
        sum = sum + nn;
        m = m * (-1);
    }
printf ("\n The sum = %d \n", sum);
}
```

output:

Input the value of x : 2
Input the number of terms : 5
The values of the series : 2
-8
32
-128
512
The sum = 410.