Assignment 3

① write a program to check whether a given number is positive or non-positive.

```
#include<stdio.h>
 int main()
 {
    int x;
   Printf("Enter a number\n");
   Scanf("%d",&x);
    if(x>0)
       Printf("Positive number");
      else
         Printf("Non-Positive number");
     return 0;
 }
```

② write a program to check whether a given number is divided by 5 or not.

```
#include<stdio.h>
 int main()
{ int x;
 Printf("Enter a number\n");
  Scanf("%d",&x);
  if(x%5)
    Printf("Not divisible");
  else
     printf("Divisible");
   return 0;
 }
```

③ write a program to check whether a given number is an even number or an odd number

```
#include<stdio.h>
 int main()
 {
    int n;
   Printf("Enter a number\n");
   Scanf("%d",&n);
   if(n%2)
      Printf("odd number");
   else
      Prinf("even number");
   return0;
}
```

④ Write a program to check whether a given number is an even number or an odd number without using % operator.

```
#include <stdio.h>
int main()
{
    int i;
    Printf("Enter a number");
    Scanf("%d", &i);
    {
     if((i/2)*2==i);
    Printf("Even number");
     else
      printf("odd number");
    return 0;
}
```

⑤ Write a program to check whether a given number is a three-digit number or not.

```
#include<stdio.h>
int main()
{
    int n, i=0;
    Printf("Enter a number\n");
    Scanf("%d", &n);
    while(n!=0)
    {
      i++;
      n=n/10;
    }
    printf(i==3?"Three digit number":"not three-digit number");
    return 0;
}
```

⑥ Write a program to print greater between two numbers. Print one number of both are the same.

```
#include <stdio.h>
int main()
{ int a, b, x;
 Printf("enter two number\n");
 Scanf("%d%d", &a, &b);
 x=a>b?a:b;
 Printf("greater number is %d", x);
 return 0;
}
```

⑦ write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots.

```
#include <stdio.h>

int main()
{
  int a,b,c,D;
  float x, y;
  Printf("Enter Coefficient of x^2, x and Constant \n");
  scanf("%d %d %d", &a, &b, &c);
  D = b * b - (4 * a * c);
  if( D<0)
  {
    printf("both roots are imeginary");
  }
   if(D==0)
   {
     Printf("both roots are equal");
      x=-b/(2.0*2*a);
      Printf("\n roots is %f", x);
   }
    if(D>0)
    {
      Printf("both roots are real and distinct");
      x=(-b+(sqrt(D)))/(2*a);
      y=(-b-(sqrt(D)))/(2*a);
      Printf("\n roots are %f %f", x,y);
    }
    return 0;
  }
```

⑧ write a program to check whether a given year is a leap year or not.

```
#include <stdio.h>
int main()
{
  int n;
  Printf("enter a year\n");
  scanf("%d", &n);
  if(n %400==0)
  { Printf("a leap year");
  }else if(n %100==0)
  { Printf("not a leap-year");
  }
   else if(n %4==0)
   {
    Printf("a leap year");
  }
  else
   printf("not a leap year");
   return 0;
}
```

(9) write a program to find the greatest among three given number. Print number once if the greatest number appears two or three times.

↔

```
#include<stdio.h>
int main()
{
 int a,b,c,x;
 Printf("enter 3 number\n");
 Scanf("%d%d%d",&a,&b,&c);
 x=a>b ? a>c ?a:c :b>c ?b:c;
 Printf("%d",x);
 return 0;
}
```

(10) write a program which takes the cast price and selling price of a product from the user. Now Calculate and print profit or loss percentage.

```
#include<stdio.h>
int main()
{
 float CP, SP, P;
 Printf("enter Cast Price\n");
 Scanf("%f", &CP);
 Printf("Enter selling Price\n");
 Scanf("%f", &SP);
 if (SP>CP)
 {
    P=SP-CP;
    Printf("Profit Percent is %f %%", (P*100)/CP);
 }
  if(CP>SP)
  { P=CP-SP;
    Printf("Loss percent is %f%%", (P*100)/CP);
  }
  else
     Printf("No Loss and No profit");
  return 0;
}
```

(11) write a program to take marks 5 subjects from the user. Assume marks are given out of 100 and passing marks is 33. Now display whether the candidate passed the examination or failed.

```
#include<Stdio.h>
int main()
{ int H,E,M,S,SC;
 Printf("Enter 5 subjects marks out of hundred\n");
 Printf("Enter This sequence - Hindi, English, Math, Science and Social Science(\n");
 scanf("%d%d%d%d%d",&H,&E,&M,&S,&SC);
 if(H<=100 && E<=100 && M<=100 && S<=100 && SC<=100)
 {
  if(H>=33 && E>=33 && M>=33 && S>=33 && SC>=33)
   Printf("congratulation you passed in exam");
  else
   Printf("fail");
 }
 else
 {
  Printf("Please enter marks less than 100");
 }
 return 0;
}
```

(12) write a program to check whether a given alphabet is in upper case or lower case.

```
#include<stdio.h>
int main()
{
  int x;
  Printf("enter a alphabet\n");
  Scanf("%c",&x);
  if(x>='a' && x<='z')
  {
    printf("Lowercase");
  }
  else if(x>='A' && x<='Z')
      Printf("Upper Case");
  else
      Printf("special character");
  return 0;
}
```

(13) write a program to check whether a given number is divided by 3 and divisible by 2.

```
#include<Stdio.h>
int main()
{
  int n;
  Printf("Enter a number\n");
```

```
    Scanf("%d", &n);
    if(n%3==0&&n%2==0)
      Printf("Divisible by 3 and 2");
    else
      Printf("Not Divisible by 3 and 2");
    return 0;
}
```

(14) write a program to check whether a given number is divisible by 7 or divisible by 3.

```
#include<stdio.h>
int main()
{
  int n;
  Printf("enter a number\n");
  Scanf("%d", &n);
  if(n%7==0&&n%3==0)
   Printf("%d is divisible by both number 7 and 3", n);
  else
   Printf("%d is not divisible by both number 7 and 3", n);
  return 0;
}
```

(15) write a program to check whether a given number is positive, negative or zero.

```
#include<stdio.h>
int main()
{
  int n;
  Printf("enter a number\n");
  Scanf("%d", &n);
  if(n>0)
   Printf("Positive");
  else if(n<0)
   Printf("Negative");
  else
      Printf("Zero");
  return 0;
}
```

(16) write a program to check whether a given character is an alphabet (uppercase), an alphabet (lower case), a digit or a special character.

```
#include<stdio.h>
  int main()
{
   int n;
   Printf("Enter a character\n");
   Scanf("%c", &n);
   if (n>='A' && n<='Z')
     Printf("upper case");
   else if(n>='a' && n<='z')
     Printf("lower case);
   else if(n>='0' && n<='9')
     Printf("Digit");
   else
     Printf("special character");
  return 0;
}
```

(17) write a program ~~to calculate~~ which takes the length of the sides of a triangle as an input. Display whether the triangle is valid or not.

```
#include<stdio.h>
 int main()
 { int a, b, c;
   Printf("Enter length of the side of a triangle \n");
   Scanf("%d %d %d", &a, &b, &c);
   if(a+b>c && a+b>b && b+c>a)
    Printf("Triangle is valid");
   else
    Print("Triangle is ~~not valid~~");
   return 0;
 }
```

(18) write a program which takes the month number as an input and display number of day in the month.

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

```
Printf("Enter month number\n");
Scanf("%d", &m);
if(m==1);
   Printf("January");
else if(m==2)
   Printf("February");
else if(m==3)
   Printf("march");
else if(m==4)
   Printf("April");
else if(m==5)
   Printf("may");
else if(m==6)
   Printf("June");
else if (m==7)
   Printf("July");
 else if(m==8)
   Printf("August");
 else if(m==9)
   Printf("september");
 elseif(m==10)
   Printf("october");
 else if(m==11)
   Printf("November");
 elseif(m==12)
   Printf("December");
 else
   Printf("Invalid month number");
 return 0;
}
```