Decision Control Statements

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

```
#include<stdio.h>
int main()
{
 int n;
 printf("enter a number:");
 scanf("%d",&n);
 if(n>0)
  printf("%d is positive number.",n);
else
  printf("%d is non positive number.",n);
return 0;
}
```

2. ***Write a program to check whether a given number is divisible by 5 or not.***

```
#include<stdio.h>
int main()
{
 int n;
 printf("enter a number:");
 scanf("%d",&n);
 if(n%5==0)
  printf("%d is divisible by 5:",n);
else
  printf("%d is not divisible by 5:",n);
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:");
 scanf("%d",&n);
 if(n%2==0)
  printf("%d is an even number:",n);
 else
  printf("%d is an odd number:",n);
 return 0;
}
```

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 n;
  printf("enter a number:");
  scanf("%d",&n);
  if(n&1)
    prinf("%d is an odd number:");
  else
    printf("%d is an even 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;
    printf("enter a number:");
    scanf ("%d",&n);
    if(n>=100 && n<=999)
     printf("this is three digit number:");
    else
     printf("this is 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;
    printf("enter two numbers:");
    scanf("%d%d",&a,&b);
    if(a>=b)
      printf("%d",a);
   else
     printf("%d",b);
  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;
    float D;
    printf("enter coefficients of quadratic equation:");
    scanf("%d%d%d",&a,&b,&c);
   D=(b*b)-(4*a*c);
   If(D>0)
     printf("roots are real and distinct:");
   if(D<0)
     printf("roots are imaginary:");
   if(D==0)
     printf("roots are real and equal:");
   return 0;
}
```

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

```
#include<stdio.h>
int main ()
{
  int y;
 printf("enter year:");
 scanf ("%d",&y);
if(y%400==0|| y%4==0 && y%100!=0);
  printf("%d is leap year:");
else
 printf("%d is not leap year:");
return 0;
}
```

9. Write a program to find the greatest among three given numbers. Print number once If the greatest number appears two or three times.

```
#include<stdio.h>
int main ()
{
  int a,b,c;
 printf("enter three numbers:");
scanf("%d%d%d",&a,&b,&c);
if(a>b && a>c)
    printf("%d is greatest number:",a);
else if( b>c)
  printf("%d is greatest number:",b);
else
printf("%d is greatest number:",c);
return 0;
}
```

10. Write a program which takes the cost price and selling price of a product from the User. Now calculate and print profit or loss percentage.

```
#include<stdio.h>
int main ()
{
  int cost,selling;
  float per,Diff;
  char p='%';
  printf("Enter cost and selling price:");
  scanf("%d%d",&cost,&selling);
 Diff=cost-selling;
per=(Diff/cost)*100;
```

```
if(Diff<0)
{
  per=(-1)*per;
printf("%f%c  is profit percentage:",per,p)
}
if(Diff>0)
printf("%f%c is loss percentage:",per,p);
return 0;
}
```

12.Write a program to check whether a given alphabet is in uppercase or lowercase.

```
#include<stdio.h>
int main ()
{
            char ch;
           printf("Enter alphabetical letter:");
           scanf("%c",&ch);
           if(ch<='A' && ch>='Z')
             printf("%c is uppercase:",ch);
          else if(ch<='a' && ch>='z')
             printf("%c is lowercase:");
           else
             printf("%c is invalid:",ch);
           return 0;
}
```

13.Write a program to check whether a given number is divisible by 3 and divisible by 2.

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

```
 {
  int n;
  printf(“Enter a number:”);
  scanf(“%d”,&n);
 if(n%6==0)
   printf(“%d is divisible by 2 and 3:”,n);
 else
   printf(“%d is not divisible by 2 and 3:”);
 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:”);
 scanf (“%d”,&n);
 if(n%3==0 || n%7==0)
  printf(“%d is divisible by 3 or 7:”,n);
else
  printf(“%d is not divisible by 3 or 7:”,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:”);
 scanf(“%d”,&n);
 if(n>0)
  printf(“%d is positive number:”,n);
 if(n<0)
  printf(“%d is negative number:”,n);
else
  printf(“%d is 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<sdtio.h>
int main ()
{
 char ch;
 printf(“enter character:”);
 scanf (“%c”,&ch);
 if(ch<=’A’ && ch>=’Z’)
   printf(“%c is uppercase of alphabet:”);
if(ch<=’a’ && ch>=’z’)
   printf(“%c is lowercase of alphabet:”);
if(ch<='0’ && ch>='9’)
   printf(“%c is digit:”);
else
  printf(“%c is special character:”);
return 0;
```

```
}
```

17. Write a program 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 three numbers:");
  scanf ("%d%d%d",&a,&b,&c);
 if(a+b>c && a+c>b && b+c>a)
   printf("this traingle is valid:");
 else
  printf("this traingle is invalid:");
return 0;
}
```

18. Write a program which takes the month number as an input and display number of Days in that month.

```
#include<stdio.h>
Int main ()
{
 int month;
 printf("enter month number:");
 scanf("%d",&month);
if(month==1||month==3||month==5||month==7||month==8||month==10||month==12)
 printf("31 days in %d month",month);
if(month==4||month==6||month==9||month==11)
 printf("30 days in %d month",month);
```

```
if(month==2)
  printf(“28 days in %d month and 29 days also when year is leap year:”,month);
else
  printf(“%d is invalid:”);
return 0;
}
```