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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    if (num > 0)
        printf("\npositive");
    else
        printf("\nnon-positive");
    return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    if (num % 5 == 0)
        printf("\nNumber is divisible by 5");
    else
        printf("\nNumber is not divisible by 5");

    return 0;
}
```

Q.3 Write a program to check whether a given number is an even number or an odd number

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    if (num % 2 == 0)
        printf("\nEven number");
    else
        printf("\nOdd number");
    return 0;
}
```

Q.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 argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    num & 1 ? printf("Odd number") : printf("Even number");
    return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
   int num, count;
   printf("Enter number = ");
   scanf("%d", &num);
   for (count = 1; num /= 10; count++);
   if (count == 3)
      printf("Number is three digit");
   else
      printf("Number is not three digit");
   return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int a, b;
    printf("Enter three number = ");
    scanf("%d %d", &a, &b);
    if (a > b)
        printf("Greater number = %d", a);
    else if (a < b)
        printf("Greater number = %d", b);
    else
        printf("%d", a);
    return 0;
}
```

Q.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 argc, char *argv[])
{
   int a, b, c;
   printf("Enter value for a, b and c = ");
   scanf("%d %d %d", &a, &b, &c);
   int d = (b * b) - (4 * a * c);
   if (d > 0)
      printf("Real & Distinct");
   else if (d == 0)
      printf("Real & Equal");
   else
      printf("Imaaginary");
   return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
   int year;
   printf("Enter year = ");
   scanf("%d", &year);
      if (year % 4 == 0)
      printf("This is a leap year");
   else
      printf("This is not a leap year");
      return 0;
}
```

Q.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 argc, char *argv[])
{
   int a, b, c;
   printf("Enter three number = ");
   scanf("%d %d %d", &a, &b, &c);
   if (a > b)
      if (a > c)
         printf("Greater number = %d", a);
      else
         printf("Greater number = %d", c);
   else if (b > c)
      printf("Greater number = %d", b);
   else
      printf("Greater number = %d", c);
   return 0;
}
```

Q.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 argc, char *argv[])
{
   float cp, sp, profit, loss;
   printf("Enter cost price = ");
   scanf("%f", &cp);
   printf("Enter selling price = ");
   scanf("%f", &sp);
   if (cp > sp)
      printf("Loss percentage = %.2f%%", ((cp - sp) / cp) * 100);
   else
      printf("Profit percentage = %.2f%%", ((sp - cp) / cp) * 100);
   return 0;
}
```

Q.11 Write a program to take marks of 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 argc, char *argv[])
{
   int s1, s2, s3, s4, s5;
   printf("Enter marks for 5 subject = ");
   scanf("%d%d%d%d%d,", &s1, &s2, &s3, &s4, &s5);
   if (s1 >= 33 && s2 >= 33 && s3 >= 33 && s4 >= 33 && s5 >=  33)
      printf("Examination passed");
   else
      printf("Examination failed");
   return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    char ch;
    printf("Enter alphabet = ");
    scanf("%c", &ch);
    if (ch >= 'a' && ch <= 'z')
        printf("Lowercase");
    else if (ch >= 'A' && ch <= 'Z')
        printf("Uppercase");
    else
        printf("wrong input");
  return 0;
}
```

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

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    if (num % 3 == 0 && num % 2 == 0)
        printf("Number is divisible by 3 and 2");
    else
        printf("Number is not divisible by 3 and 2");
    return 0;
}
```

Q.14 Write a program to check whether a given number is divisible by 7 or divisible by 3.

```
#include <stdio.h>
int main(int argc, char *argv[])
{
   int num;
   printf("Enter number = ");
   scanf("%d", &num);
   if (num % 7 == 0 || num % 3 == 0)
      printf("Number is divisible by 7 OR divisible by 3");
   else
      printf("number is not divisible");
   return 0;
}
```

Q.15 Write a program to check whether a given number is positive, negative or zero.

```
#include <stdio.h>
int main(int argc, char *argv[])
{
    int num;
    printf("Enter number = ");
    scanf("%d", &num);
    if (num < 0)
        printf("Number is negative");
    else if (num > 0)
        printf("Number is positive");
    else
        printf("Number is zero");
    return 0;
}
```

Q.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 argc, char *argv[])
{
   char ch;
   printf("Enter character = ");
   scanf("%c", &ch);
   if (ch <= 'a' && ch >= 'z')
      printf("Lowercase");
   else if (ch <= 'A' && ch >= 'Z')
      printf("Uppercase");
   else if (ch >= '0' && ch <= '9')
      printf("digit");
   else
      printf("Special symbol");

   return 0;
}
```

Q.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 argc, char *argv[])
{
   float a, b, c;
   printf("Enter length of the sides of an triangle = ");
   scanf("%f %f %f", &a, &b, &c);
   if ((a + b >= c) && (a + c >= b) && (c + b >= a))
      printf("This triangle is valid");
   else
      printf("This triangle is not valid");
   return 0;
}
```

Q.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 argc, char *argv[])
{
    int num;
    printf("Enter month number = ");
    scanf("%d", &num);
    if (num >= 1 && num <= 7)
        if (num % 2 != 0)
            printf("31 Days");
        else if (num == 2)
            printf("28 or 29 Days");
        else
            printf("30 Days");
    else if (num % 2 == 0)
        printf("31 Days");
    else
        printf("30 Days");
    return 0;
}
```