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

```
#include<stdio.h>
int main()
{
	int num;
	printf("Enter a number ");
	scanf("%d", &num);
	if (num>0)
	{
		printf("positive");
	}
	else
	{
		printf("Non-positive");
	}
}
```

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

```
#include<stdio.h>
int main()
{
	int num;
	printf("Enter a number ");
	scanf("%d", &num);
	if (num%5==0)
	{
		printf("Divisible by 5");
	}
	else
	{
		printf("Not divisible by 5");
	}
}
```

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

```
#include<stdio.h>
int main()
{
	int num;
	printf("Enter a number ");
	scanf("%d", &num);
	if (num%2==0)
	{
		printf("even number");
	}
	else
	{
		printf("odd number");
	}
}
```

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 num;
	printf("Enter a number ");
	scanf("%d", &num);
	if (num & 1)
	{
		printf("odd number");
	}
	else
	{
		printf("even number");
	}
}
```

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

```
#include<stdio.h>
int main()
{
 int n, count = 0;
	printf("Enter a number ");
	scanf("%d", &n);

	if (n>0)
		count++;
	n=n/10;

	if (n>0)
		count++;
	n=n/10;

	if (n>0)
		count++;
	n=n/10;

	if (n>0)
		count++;
	n=n/10;

	if (n>0)
		count++;

	if (count == 3)

		printf("three digit number");
	else
```

```
        printf("not three digit number");
}
```

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

```
#include<stdio.h>
int main()
{
    int num1, num2;
    printf("Enter the numbers ");
    scanf("%d %d",&num1, &num2);
    if (num1>num2)
    {
        printf("num1 is greater than num2");
    }
    else if (num1 == num2)
    {
        printf("both are the same");
    }
    else
    {
        printf("num2 is greater than num1");
    }
}
```

7. Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginar y roots

```
#include<stdio.h>
int main()
{
   int a, b, c, x;
   printf("Enter the roots of quadratic equation: ");
   scanf("%d%d%d", &a, &b, &c);
   x= b*b - 4*a*c;
   if(x>0)
   {
      printf("roots real & distinct are ");
   }
   else if(x==0)
   {
      printf("roots real & equal");
   }
   else
   {
      printf("imaginary roots");
   }

}
```

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

```
#include<stdio.h>
int main()
{
	int year;
	printf("Enter a year ");
	scanf("%d",&year);
	if(year % 4==0)
	{
		printf("Leap year");
	}
	else if (year%100==0 && year%400==0)
	{
		printf("Leap year");
	}
	else
	{
		printf("Not Leap year");
	}
}
```

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 the numbers ");
	scanf("%d%d%d",&a,&b,&c);
	if (a>b)
	{
		if (a>c)
		{
			printf("%d",a);
		}
		else
		{
			printf("%d",c);
		}
	}
	else
	{
		if (b>c)
		{
			printf("%d",b);
		}
		else
		{
			printf("%d", c);
		}
	}
}
```

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()
{
	float cp, sp, per;
	printf("enter the cost price and selling price ");
	scanf("%f%f",&cp,&sp);
	per = (sp - cp)*100/cp;
	if (per>0)
	{
		printf("Profit is %f percentage",per);
	}
	else
	{
		printf("loss is %f percentage",per);
	}
}
```

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 h,e,m,c,p;
	printf("Enter the number of subjects ");
	scanf("%d%d%d%d%d",&h,&e,&m,&c,&p);
	if (h>=33 && e>=33 && m>=33 && c>=33 && p>=33)
	{
		printf("passed the examination");
	}
	else
	{
		printf("failed the examination");
	}
}
```

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

```
#include<stdio.h>
int main()
{
	char c;
	printf("Enter a alphabet ");
	scanf("%c", &c);
	if (c>='a' && c<='z')
```

```
    {
        printf("alphabet is lowercase");
    }
    else if(c>='A' && c<='Z')
    {
        printf("alphabet is uppercase");
    }
    else
    {
        printf("Other character");
    }
}
```

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%3==0 && n%2==0)
    {
        printf("divisible by 3 and divisible by 2");
    }
    else
    {
        printf("NOT divisible by 3 and divisible by 2");
    }
}
```

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%7==0 || n%3==0)
    {
        printf("divisible by 7 or divisible by 3");
    }
    else
    {
        printf("NOT divisible by 7 or divisible by 3");
    }
}
```

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("positive");
	}
	else if(n<0)
	{
		printf("negative");
	}
 else
 {
  printf("zero");
 }
}
```

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()
{
	char character;
	printf("Enter a character ");
	scanf("%c", &character);
	if(character>='A' && character<='Z')
	{
		printf("character is uppercase");
	}
	else if (character>='a' && character<='z')
	{
		printf("character is lowercase");
	}
	else if (character>='0' && character<='9')
	{
		printf("character is digit");
	}
	else
	{
		printf("special character");
	}
}
```

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()
{
   float a, b, c;
   printf("Enter the sides of a triangle: ");
   scanf("%f%f%f", &a, &b, &c);
   if((a+b>c) && (a+c>b) && (b+c>a))
   {
      printf("triangle is valid");
   }
   else
   {
      printf("triangle is not valid");
   }

}
```

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_no;
      printf("Enter the month no ");
      scanf("%d",&month_no);
      if (month_no == 1||month_no == 3||month_no == 5||month_no == 7||month_no == 8||month_no == 10||month_n
o == 12)
      {
            printf("31 days");
      }
      else if (month_no==4||month_no == 6||month_no == 9||month_no == 11)
      {
            printf("30 days");
      }
      else if (month_no == 2)
      {
            printf("28 or 29 days");
      }
      else
      {
            printf("invalid month no");
      }
}
```