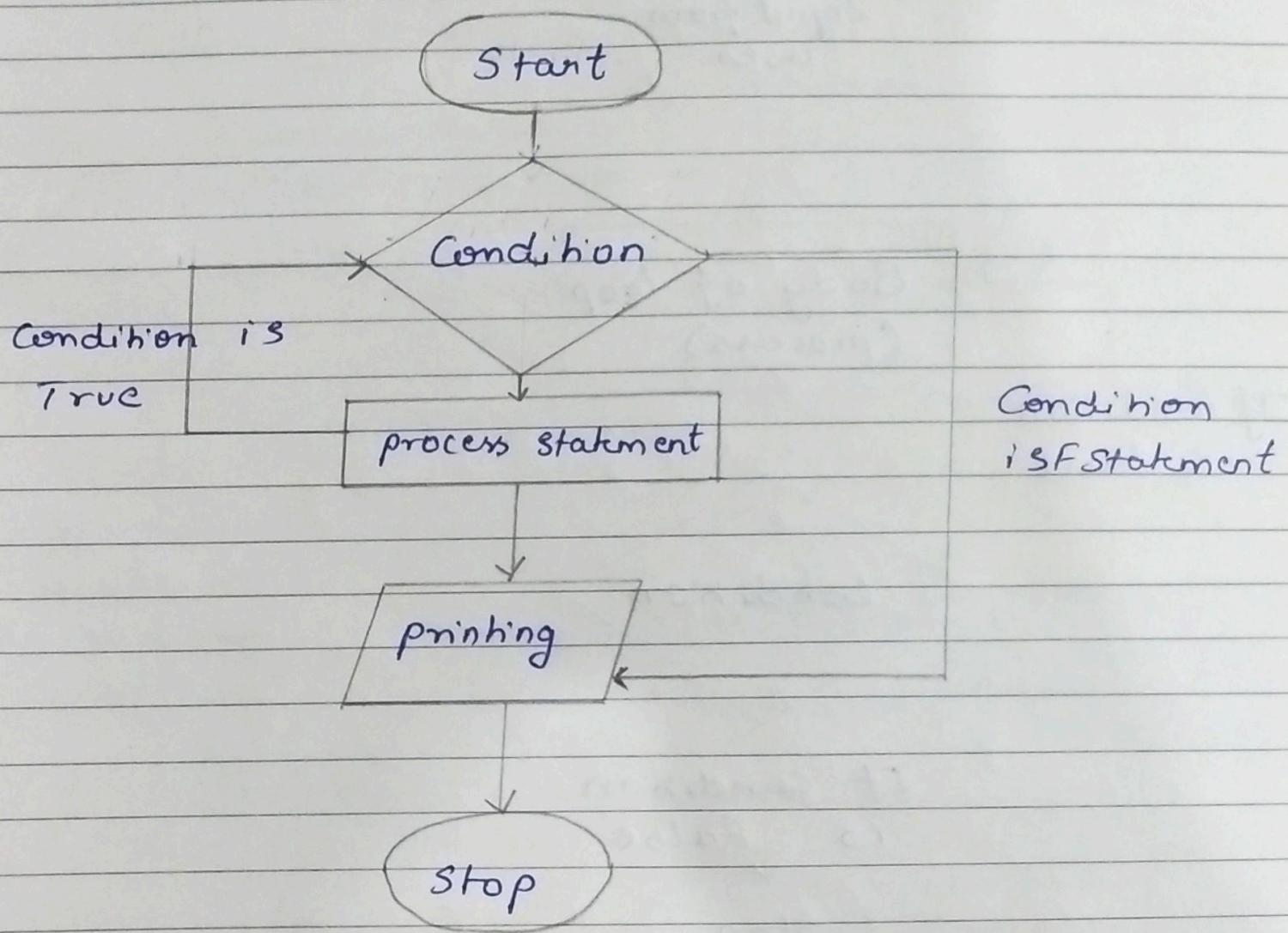


* Principle of programming language *

Assignment 1

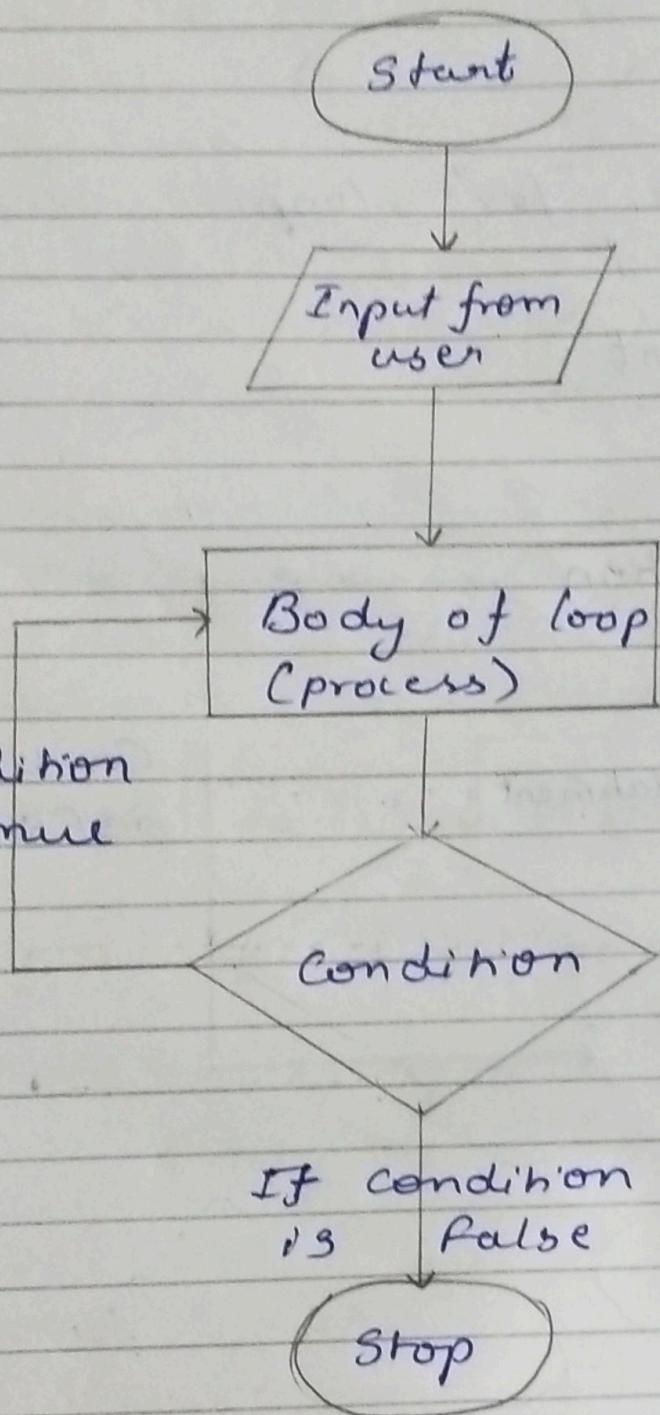
Ans-1.

Flow chart for "for" loop.



Syntax for "for Loop":- `for (int i=n; i<=n; i++)`
or
`for (int i=n; i>=1; i--)`
where n can be any real number

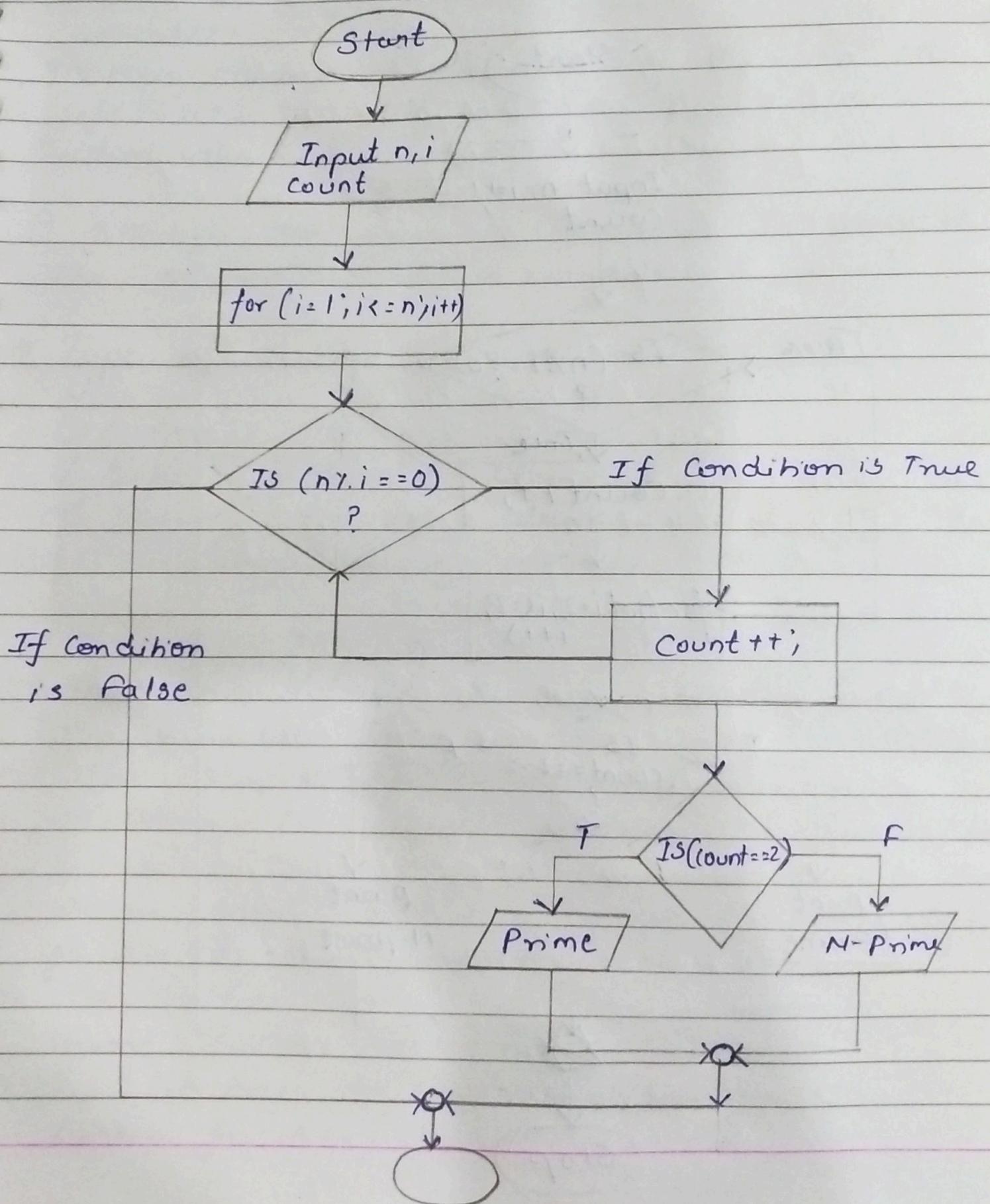
* Flow chart for "do while" Loop.



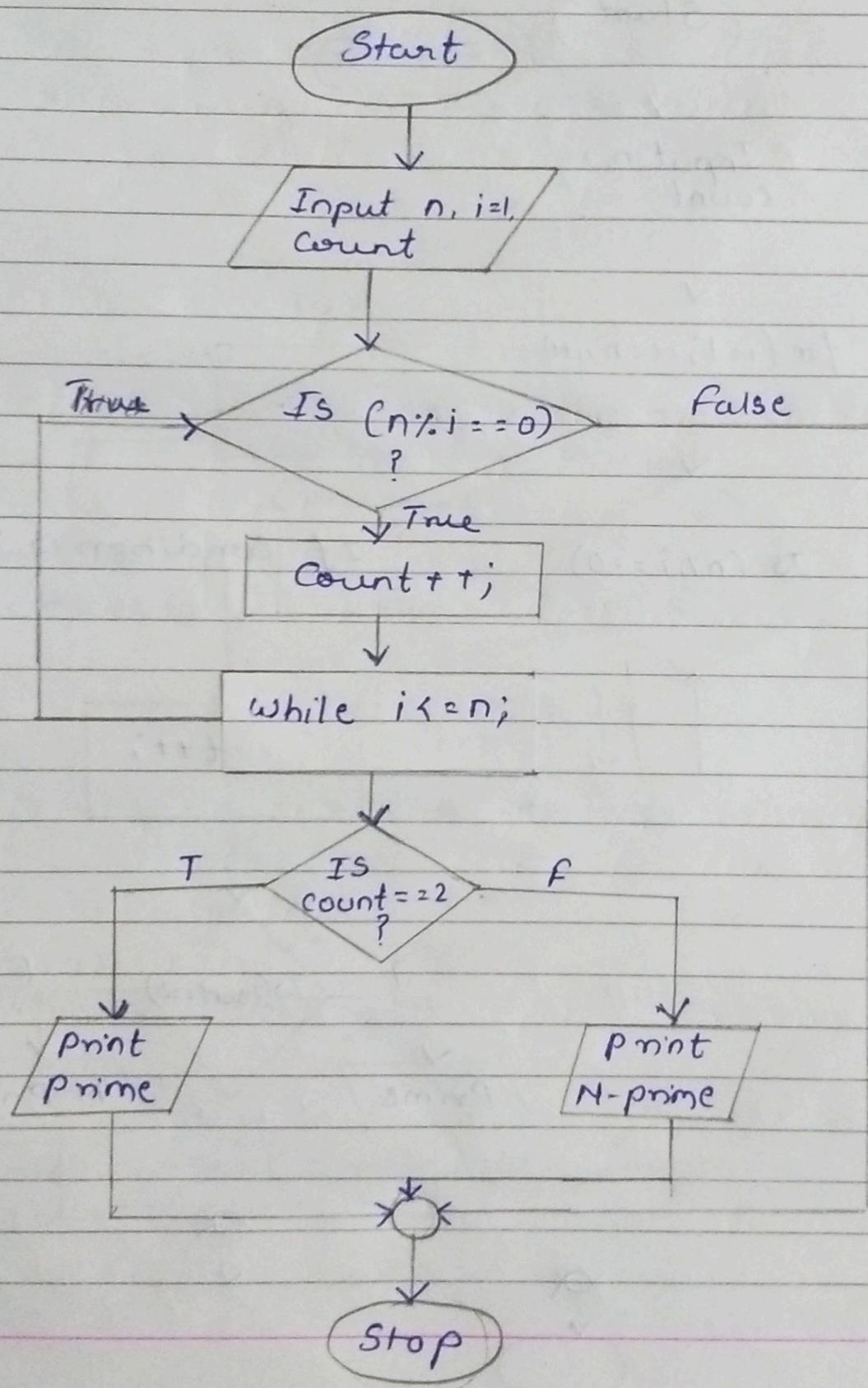
Syntax for do while Loop:- do { Body of loop }

 } while { condition
 is true }

Eg@prime Number using for Loop where number inputed by user.



Eg ② prime number using do while , where number inputed from user.



Ans-2- In C programming language storage classes in C determine the scope, lifetime and visibility of the variable.

Storage classes in C are used to find the lifetime, visibility, memory location, and initial value of a variable.

A storage cell class in C is used to represent the information of a variable.

* Types of Storage classes in C:-

- ① Automatic Storage classes in C.
- ② Register Storage classes in C.
- ③ Static Storage classes in C.
- ④ External Storage classes in C.

• Automatic Storage

- These are default storage class for all the variables declared inside a function/block.
- The scope of the auto variables can only be accessed within the function/block. But also they can accessed outside of their scope by using concept of pointers by pointing to exact memory location.
- The initial value of the Automatic storage contain an garbage value.
- The lifetime of Automatic storage is within function only.

• Register Storage:-

- Life time of Register is within the function only
- The scope of Register is local.
- Initial value is garbage value.
- Storage location = Register memory.

• Static Storage:-

- Life :- return the value of variables between different function calls.
- Scope :- local
- initial value :- zero.
- Storage location :- CPU memory.

• External Storage:-

- Lifetime :- External storage memory last upto the end of the main program
- scope :- global
- initial value :- zero
- Storage location :- CPU memory.

Ans-3-

①

Compiler.

Interpreter.

① Compiler Read the whole programm in single line and then execute it.

① Interpreter Read the programm line by line and execute it.
or it read/takes single line and than interprets.

② It generates machine code.

② It did not generate machine code.

③ Eg C, C++

③ Eg python.

Ans-4-(2)

Return Statement

Break Statement

① It is used to exit the function and/or also returning the value of current function in another sub function.

② It is used to exit from the loop.
It can be used in any types of loop like for, while, do-while or switch statement.

② Return statement return a value which consists fo of T/F or all.

③ Break statement did not return any value.

③ Syntax:- return 0;

③ Syntax:- Break;

Ans-4-

* Structure of C program for calculating area of circle:-

① Documentation Section.

// Program to Find the area of circle
where the r is inputed from the user.

② Link section

// No necessary of any C library.
include <stdio.h>
include <conio.h>

③ Definition Section

int area = 3.14 * r * r;

④ Global Declaration Section

int r;

⑤ Main function

```
{
    int r; // Declaration part//  

    int area;  

    printf ("Enter the radius of circle:");  

    Scanf ("%d", &r);
```

// Executable part //

```
int area = 3.14 * r * r;
```

```
printf ("The area of circle is : %d", r);
```

// For printing the output //

}

* Declaration and Definition part:-

Declaration.

Definition.

① It can be declared any number of times.

① It can be defined only once.

② Memory is not allocated during declaration.

② Memory will be allocated during giving definition.

Ans-5- Bitwise Operator consist of logical Operator which convert and digit number char into Binary then apply the operations.

There are 6 types of Binary Operator in C programming language.

① AND Operator:- Always give true when both condition is true.

$$n = 16 \text{ } \& \text{ } y = 15$$

$$n = 16 = 10000 \text{ } \& \text{ } 01111 = 15 = y$$

$$\text{output} = 00000$$

⑤ Left Shift ($<<$) \Rightarrow adds 0 from Right of Binary Number.

$$n = 16 = 10000$$

$n \Rightarrow 0000$ {False} It will give 0 as output.

⑥ Right shift ($>>$)

$$n = 16 = 10000$$

$$n = 01000 \{ \text{True} \}$$

It will give 8 as output.