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Section

A

Subject

Introduction to  
Computer Programming

Submitted to

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# Program for Grading System Using If-else statement.

#include <iostream.h>

#include <conio.h>

int maine()

{

int marks;

cout << "Program to find Grade" << endl;

cout << "Enter Marks: "

cin >> marks;

if (marks > 90 && marks <= 100)

cout << "your grade is A+";

else if (marks >= 70 && marks < 80)

cout << "your grade is B";

else if (marks >= 60 && marks < 70)

cout << "your grade is C";

```
else if (marks >= 50 && marks < 60)
```

```
    cout << "your Grade is D;"
```

```
else if (marks >= 0 && marks < 50)
```

```
    cout << "your Grade is F;"
```

```
else cout << "Invalid marks;"
```

```
return D;
```

```
}
```

(b)

## IF STATEMENT

" Sometime we want to selectively execute a block of code

(i) → The C++ Syntax of the If statement is ;  
if (logical expression)

```
{  
"Block of code to execute if statement is true  
}
```

(ii) The block of code should be indented 3-4 spaces to aid programme readability

## IF ELSE STATEMENT

" Some time we need to handle two alternative in our code

→ The C++ Syntax of the If else statement is

If (logical expression)

```
{  
"Block of code to execute if expression is true
```

```
}  
else
```

```
{  
"Block of code to execute if expression is false
```

```
}
```

(iii) The two block of code should be indented 3-4 spaces to aid program readability

4) If block of code is only one line long the brackets can be omitted

5) The If Statement is used to execute a set of statements after a condition

4) If either block of code is only one line long the brackets can be omitted

5) Either one of the two blocks of statement is executed after evaluating a condition

Ans  
② a

Program to Display a menu to perform various function using switch statement.

```
#include <iostream.h>
```

```
#include <conio.h>
```

```
int main () {
```

```
    char oper;
```

```
    float num, num 2;
```

```
    cout << "enter an operator (+, -, x, /) : ";
```

```
    cin >> oper;
```

```
    cout << "enter two number: " << endl;
```

```
    cin >> num 1 >> num 2;
```

```
    switch (oper) {
```

```
        case '+':
```

```
            cout << num 1 >> "+" << num 2 <<
```

```
            switch (oper) {
```

```
                "=" << num 1 + num 2;
```

```
                break;
```

```
        case '-':
```

```
            cout << num 1 << " - " << num 2 <<
```

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" = " << num1 - num2;

break;

Case '\*':

cout << num1 << "\*" << num2 <<

" = " << num1 \* num2;

break;

Case '|':

cout << num1 << "|" << num2 <<

break;

default:

cout << "Error";

break;

}

return 0;

}

A  
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## Nested If else statement:-

When an if else statement is present inside the body of another "if" or "else" then this is called nested if else.

## Switch statement:-

In Computer programming language a switch statement is a type of selection control mechanism used to allow the value of a variable or expression to change the control flow of program execution via search & map.



## 21 Nested IF-EISE STATEMENT

i) IF become complicated for multiple selection

ii) It uses an independent expression for each case

iii) The test condition can be given in a special range of value. If the given condition matches then the statement under it will be executed.

## SWITCH STATEMENT

It is easy to understand for multiple selections

- It uses a single expressions for all cases, but each case must have a const value of integer type or character type

Only a single expression is given to the switch statement which returns a single value. The test condition cannot be given in a specified range.  
It is draw back

14  
3  
(9)

## Relational Operators:

Relational operators are used to compare value of two expression depending on their relation.

An expression that contains relational operators is called relational expressions:

If the relationship is true then the value of the relation is 1 False  $\{$

If the relation is false then the value of expression is 0.

The relational operators are

$<$  less than

$>$  greater than

$<=$  less than or equal to

$==$  is equal to

$!=$  is not equal to

# Relational Expression

A condition or logical expression is an expression that can only take the value true or false.

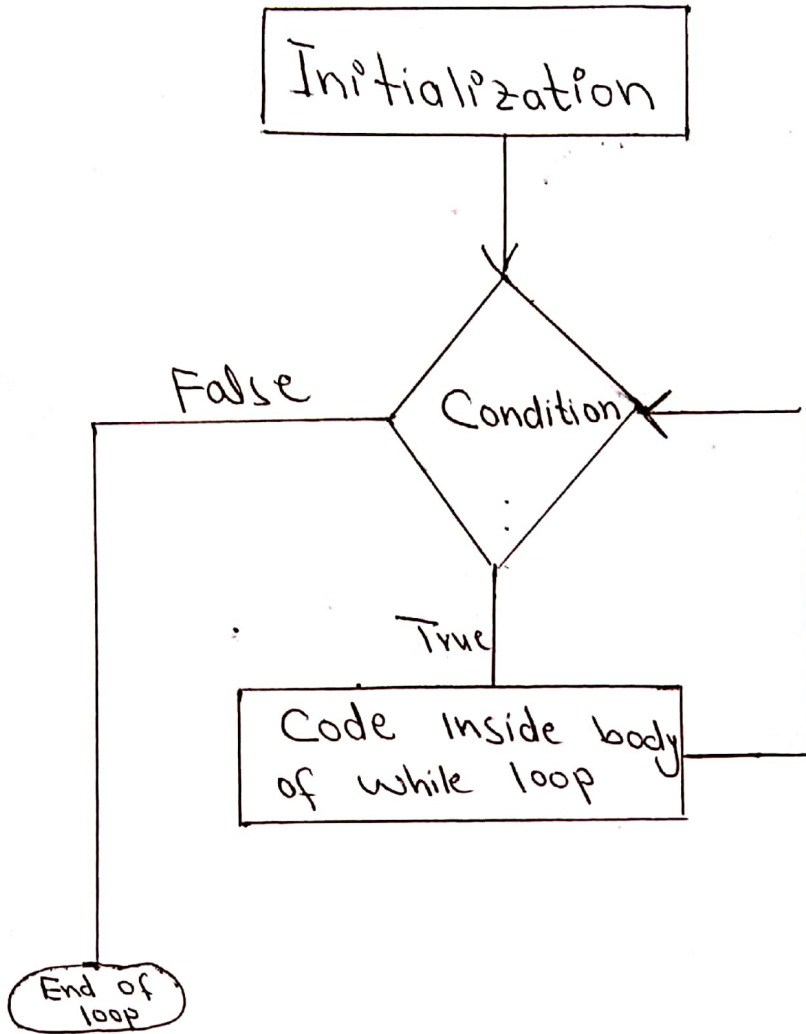
• A simple form of logical expression is the relational expression.

• The following is an example of a relational expression

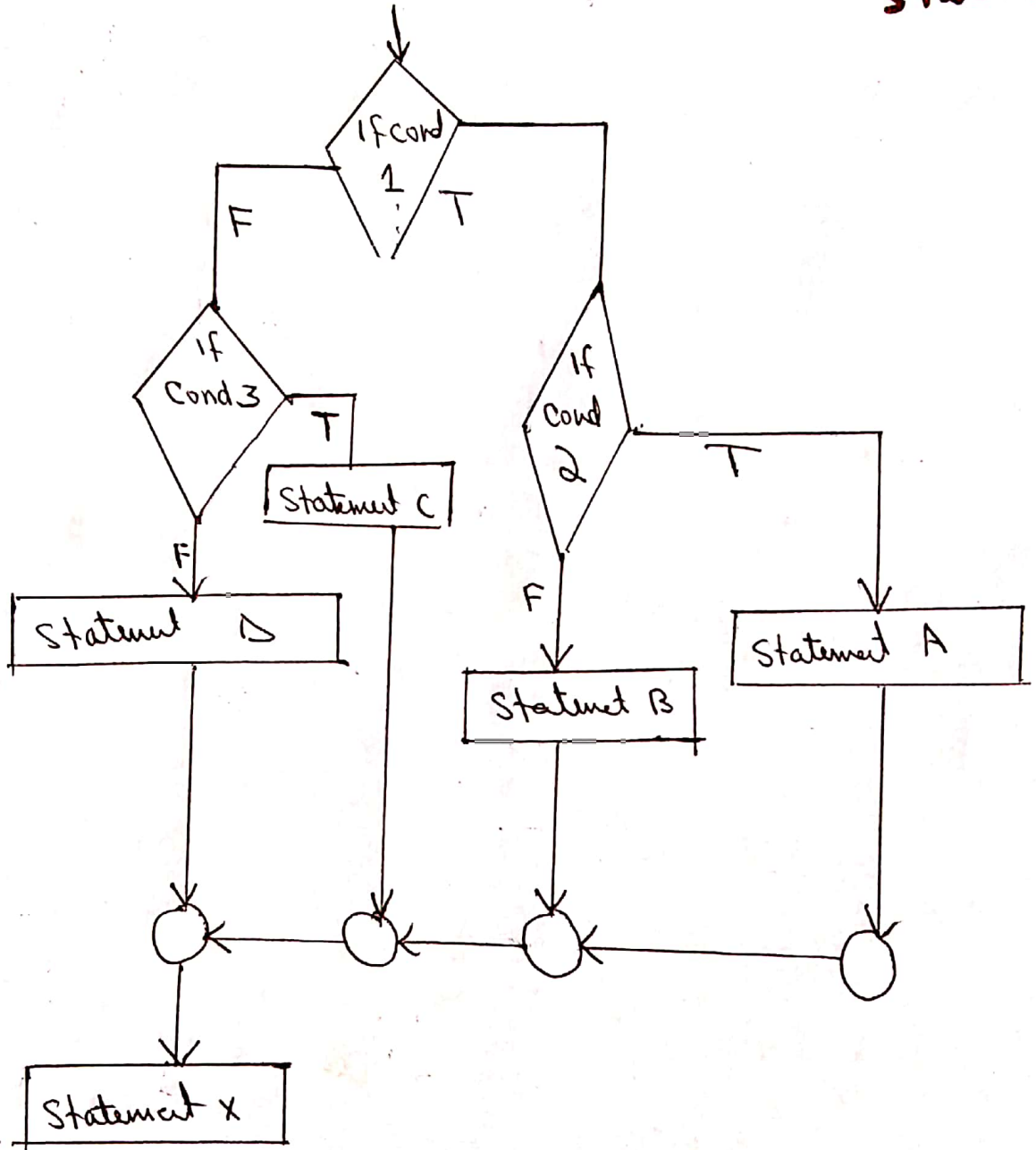
$$x < y$$

3b

# Flow Chart of while loop



# Flow chart of If Nested else statement



Ans  
4  
(a)

## Program in C++ to find Volume of a Cylinder

```
#include <iostream.h>
```

```
#include <conio.h>
```

```
int main ( )
```

```
{
```

```
float Radius, Height, Volume, Surface Area,
```

```
PI = 3.14;
```

```
cout << "Enter radius of cylinder;"
```

```
cin >> Radius;
```

```
cout << "\nEnter height: ";
```

```
cin >> Height;
```

```
Volume = PI * Radius * Height;
```

```
Surface Area = 2 * PI * Radius * (R + H);
```

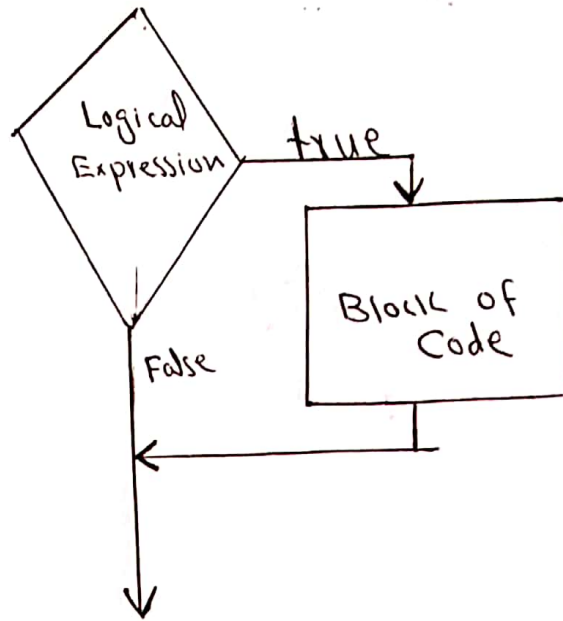
```
cout << "\n\n Volume of cylinder is: " << Surface Area
```

```
return 0;
```

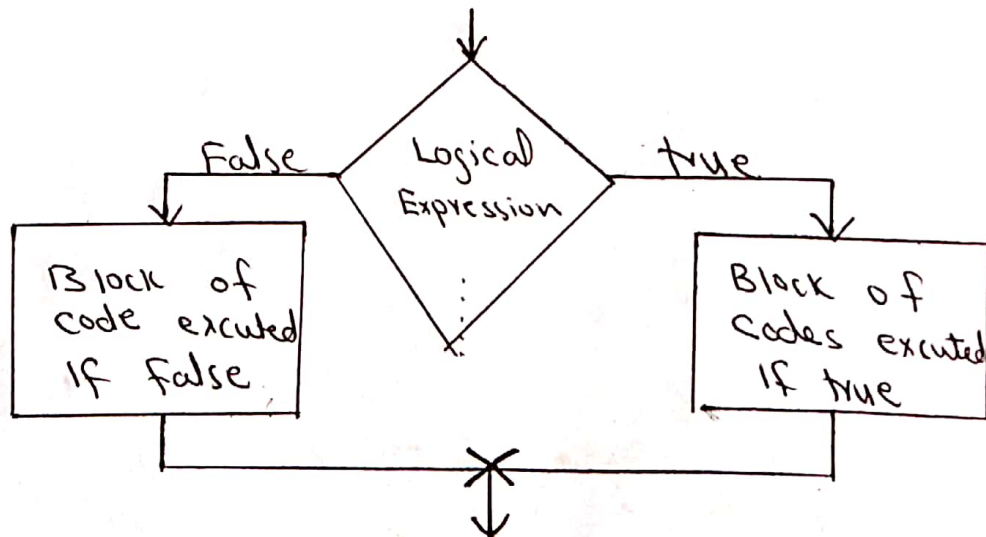
```
}
```

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# Flow Chart of IF-STATEMENT



# Flow Chart of IF-ELSE STATEMENT



Ans  
5

## Sequential Statement:

Sequential statements like  $A := 3$  are interpreted one after another, in the order in which they are written. VHDL sequential statement can appear only in a process sub-program.

A VHDL process is a group of sequential statements. Consider the following

Assignment statements

Variable Assignment statements

If statement

Case statement

loop statement

next statement

exit statement

Sub programs



Ans  
5  
P

```
#include <iostream.h>
```

```
#include <conio.h>
```

```
void main ( )
```

```
{
```

```
int a, b, c, d, e, f, g;
```

```
clrscr ( ) ;
```

```
cout << "In Enter first number a : ";
```

```
cin >> a
```

```
cout << "In Enter second number : ";
```

```
cin >> b;
```

```
c = a + b;
```

```
d = a - b;
```

```
e = a * b;
```

```
f = a / b;
```

```
g = a % b;
```

```
cout << "Addition = " <<<< "In ";
```

```
cout << "Subtraction = " <<d<< "In ";
```

```
cout << "Multiplication = " <<e<< "In ";
```

```
cout << "Division " << f << "In ";
```

```
cout << "Modulus = " << g << "In ";
```

```
getch ( ) ;
```