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Sec A

Subject C++

Answer # 1 part a.

```
#include <iostream.h>
using namespace std;
int main ()
{int marks;
Cout <<"- Program To Find Grade -"<<endl;
Cout <<"\nEnter marks:";
Cin >> marks;
if (marks >= 90 && marks <= 100)
    cout<<"Your Grade is A.";
else if (marks >= 80 && marks <90)
  Cout <<"Your Grade A
  else if (marks >=70 && mark<80)
    Cout <<" your Grade B.";
    else if (marks >= 60 && mark<70)
      Cout <<" your Grade C.";
      else if (marks >= 50 && marks<60)
      Cout <<"Your Grade is D.";
      else if (marks >= 0 && marks<50)
      cout <<" your Grade F.";
      else Cout <<" invalid Marks.";
                return 0;}
```

Answer # 1 Part B.

IF Statement:-

Sometimes we want to selectively execute a block of code

→ The C++ syntax of the if statement is;

```
if (logical expression)
{
// Block of code to execute
if expression is true
}
```

→ When expression is true, the block of code is executed. When expression is false the block of code is skipped.

IF ELSE statment :-

A control structure that execute statement if the condition statements in the is true & executes the option block if the condition is false.

→ If the expression in the "if" block is true, the statemed

inside "if" block will execute if not the else block will execute.

if the condition in the "if" block is false the else will execute.

Answer # 2 a

Write a program.

```
# include <iostream>
 using namespace std;
 int main (void)
  {
Char selection;
Cout << "\n Menu";
Cout << "\n =======";
Cout << "\n A - Append";
Cout << "\n M - Modify";
Cout << "\n D - Delete";
Cout << "\n Enter X - Exit";
Cout << "\n Enter selection:";
// read the input
Cin >> selection;
Switch (selection)
 {
Case 'A';
case 'a' :{ Cout "\nto append a record\n":}
break ;
Case 'M';
Case 'm' :{Cout << \n to modify a record":}
Case 'D'
Case 'D' : {Cout << "\n to delete record"; }
 break
Case 'X';
Case 'X': {Cout << "\n to exit menu";
```

Answer # 2 (b)

NESTED If-Else Statements:

(1) It become complicate for multiple selections.

(2) It uses an independent expression for each case

(3) 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)

(1) It is easy to understant for multiple selections.

(2) (2) It uses a single expression for all casses. but each case must have a constant value of integer type or character type.

(3) Only a single expression is given in the switch statement which returns a single value. the test condition can not be given in a specified range. It is drawbacks.

Answer # 3 part (a)

Relational operators :-

Relational operators are used to compare value of two expression depending on their relation. An expression that contain relational operator is called relational expression if the relation is true then the value of relational expression is 1 & if the relation is false then the value is 0. The relation operators are.

< less than
> greater than
<= less than or equal to
>= greater than or equal to
== is equl to
!= is not equal to

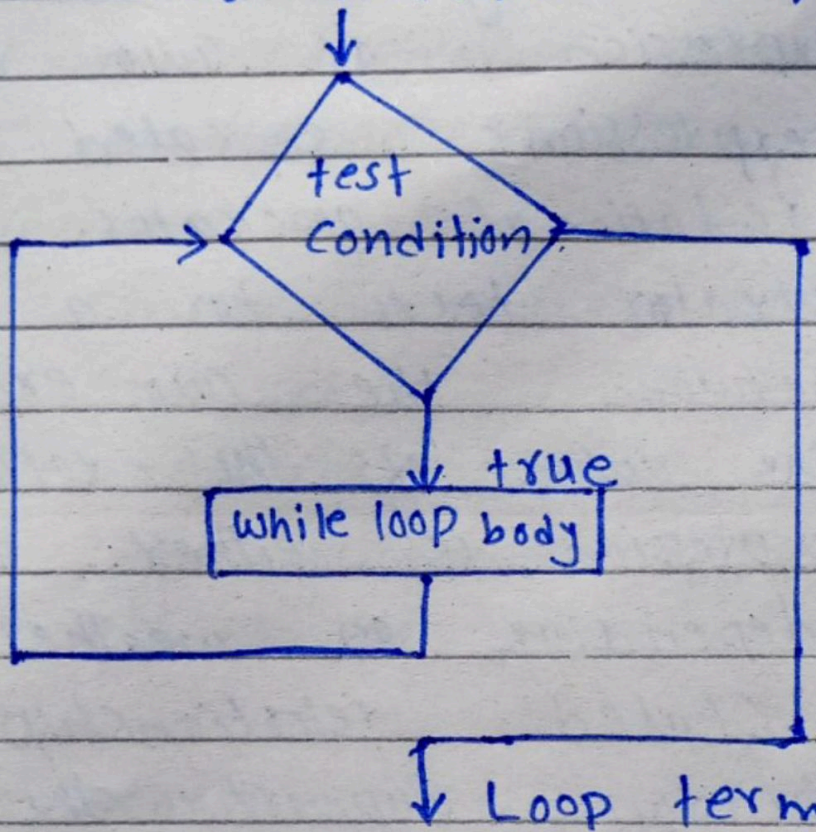
Relational expression :

A relational expression consist of two arthmetic expression or two character expressions seprated by a relational operator. A relational operator tests for a relationship between the two expressions the value of the relational expression is either true or false depending on weather the stated relationship holds. Fortran support the following relational operators;

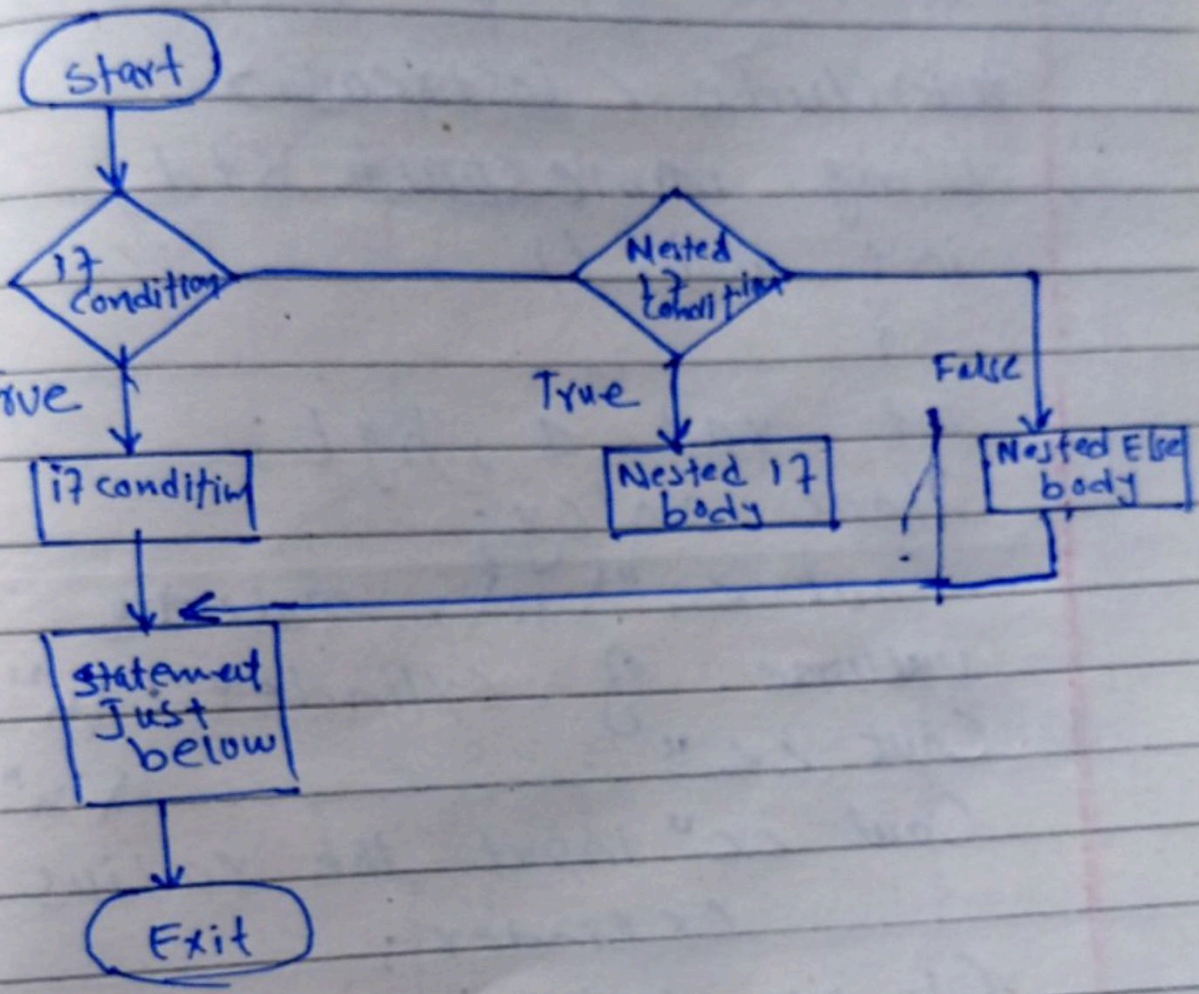
operator	Relationship.
LT.	Less than
LE	Less than or equall to
NE	to equal to
EQ	Equal to
GT	Greater than
GE	Greater or equal

Answer # 3 part B.

Draw Flow Chart For While Loop.



Draw Flow chart Nested if Statement.



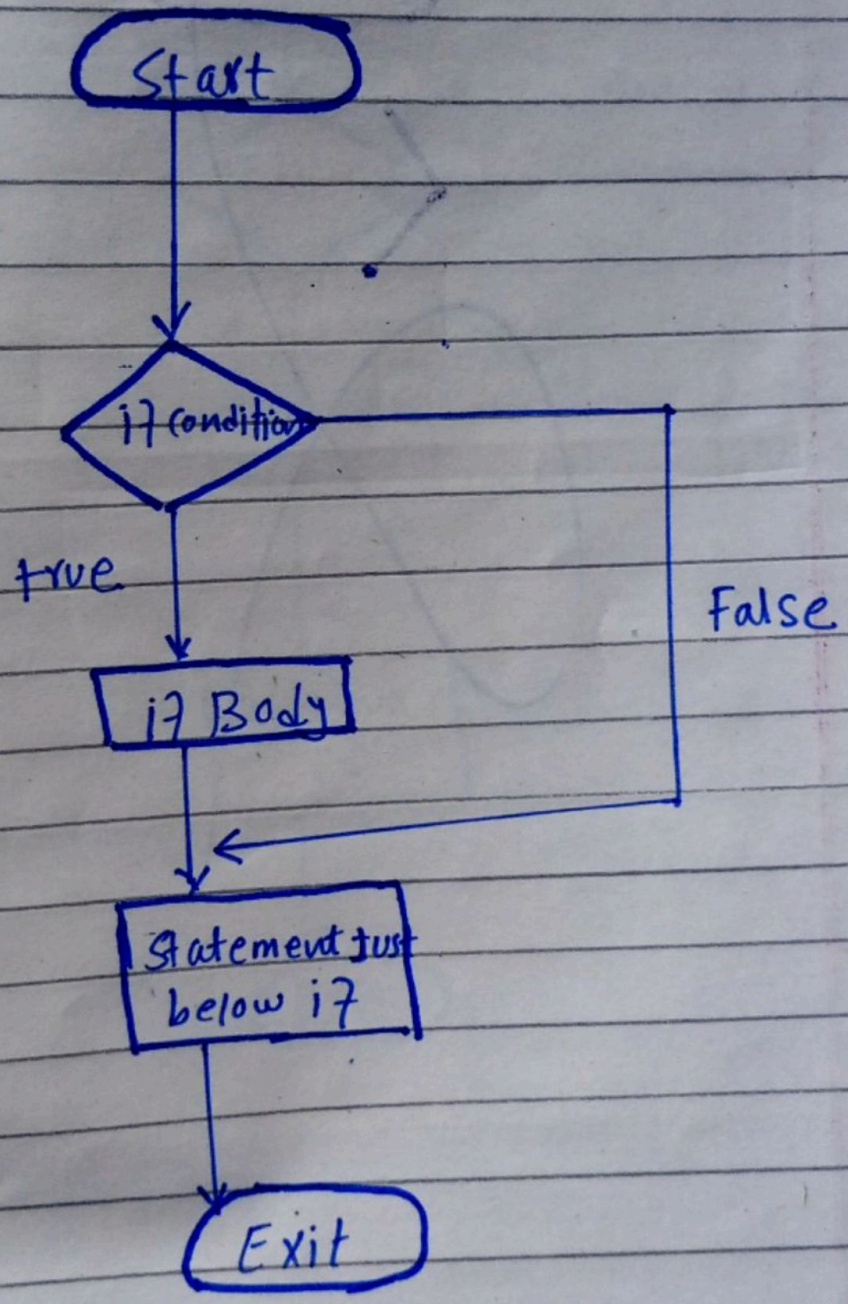
Answer 4 (a)

write program find volume of cylinder.

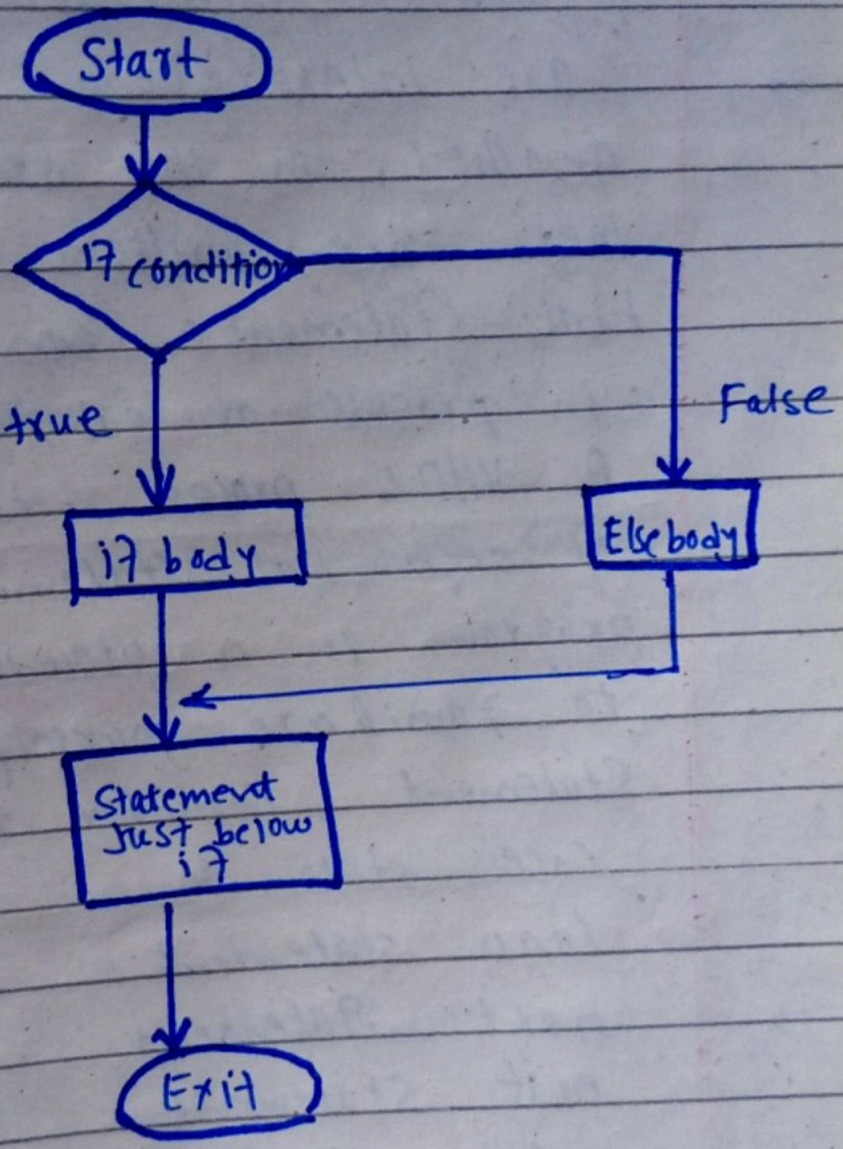
```
#include <iostream>
using namespace std;
int main ()
  {
int rad 1 , hgt;
float volcy;
Cout << "\n\n calcute the
volume of cylinder : \n";
Cout << "_____\n";
Coul << " input the radius of
        cylinder ;
Cin >> rad 1 ;
Cout << " Input the height of the
        cylinder : ";
Cin >> hgt ;
volcy = (3.14 * rad 1 * hgt);
  Cout << " the volume of a cylinder
        is : "<<
volcy << endl;
    Cout << endl ;
      return 0;
    }
```

Answer 4 (b)

Draw Flow Chart for if Statement & if else Statement.



Flow chart for if else statement.



Answer # 5 (a)

Discuss:

Sequential statement like A i=3 are interpreted one after another, in the order in which they are written. VHDL sequential statements can appear only in process or sub program.
A VHDL process is a group of sequential statement ; a sub-program is a procedure or function.
to familiaze yourself with sequential Statement, Consider the following
case statement.
loop statement
next statement
exit statement
sub program statement
returns statement
null statement.
proccess are composed of sequential Statement, but proc ces process are themselves concurrent Statemt 6

Answer #5 (b)

```
# include < iostream.h >
# include < conio.h >
 void  main ()
   {
 int a,b,c,d,e,f,g;
   clrscr ();
   Cout << "\n Enter First name a: ";
    Cin >> a;
    Cout << "\n Enter Second
                  Number b: ";

    Cin >> b;
    c = a+b;
    d = a-b;
    e = a * b;
    f = a/b;
    g = a%b
Cout << " Addition = " << c << "\n";
Cout << "Subtraction = " << d << "\n";
Cout << " Division Mutiplication = " << e << "\n
cout << " Division = " << f << "\n";
Cout << " Modulus = " << g << "\n"
    getch ();
```