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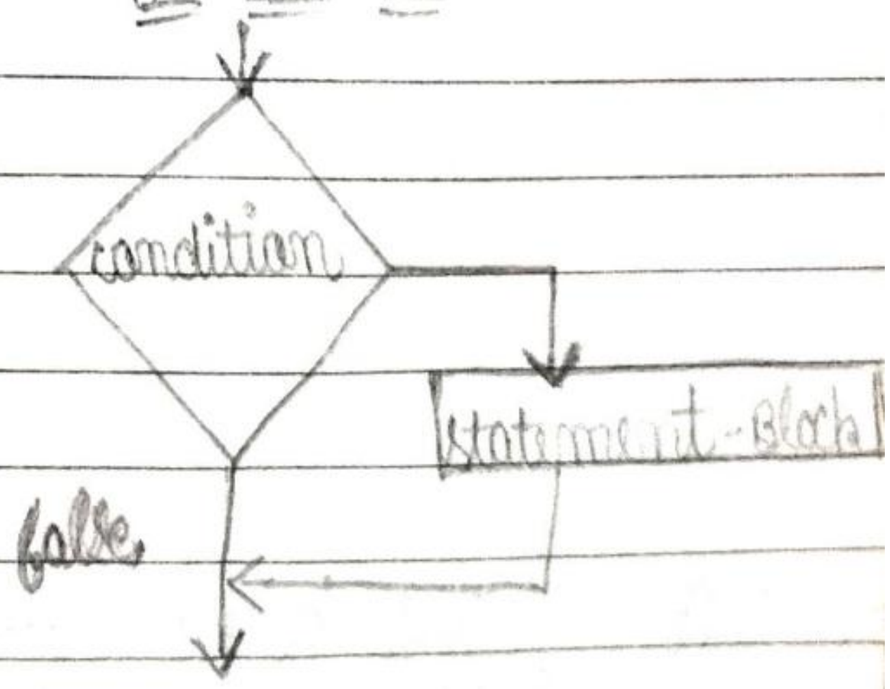
TOPIC: 7 Decision Control Statements

Decision making: Decision making is about deciding the order of execution of statements based on certain condition or depending on the result of condition.
It means, if the condition is true, one set of statements executed.
And if the condition is false, other set of statements is executed.
Decision making statements are:

1.) If statement
2.) If else statement
3.) Nested if-else statement
4.) If else if statement
5.) Switch statement

1.) **if statement:** It is the most ~~sym~~ simple statement.
If statement is used to execute a set of statements, if certain condition true.
Syntax: if (condition)
{
Statement 1;
Statement 2;
- - - - -
}

Flowchart:



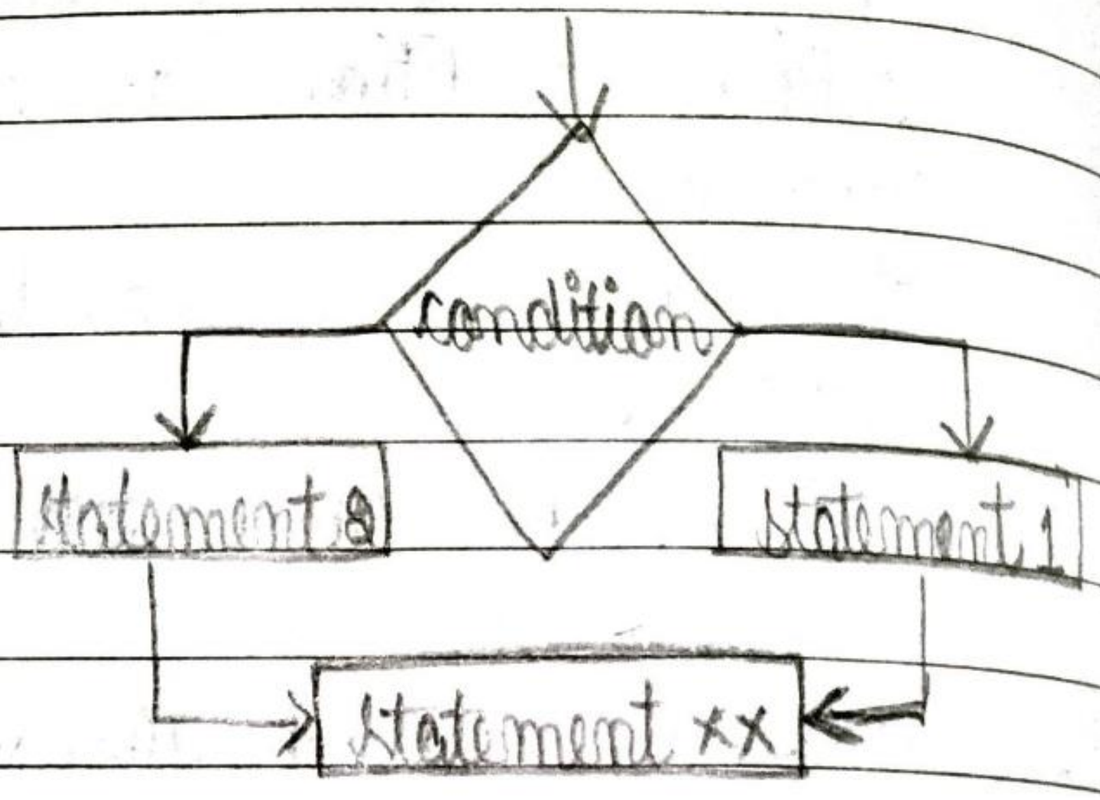
Program:

```
#include <stdio.h>
#include <conio.h>
void main()
{
clrscr();
int a, b;
a=10;
b=80;
if (a>b)
Printf("a is greater");
getch();
}
```

② If else statement: It is used to execute set of statement, if condition is true and execute another set of statement if, condition is false.

Syntax: if (condition)
{
statement one1;
}
{
else
{
statement 2;
}

Flowcharts:



Programs:

```
# include <stdio.h>
# include <conio.h>
Void main ()
{
  clrscr ();
int  a,b;
 a= 10;
 b= 20;
 if (a>b)
  printf ("a is greater than b");
 else
    printf ("b is greater than a");
    getch ();
}
```

③ Nested if else statement: An if else statement may have another if else statement in the 'if' and 'else' blocks.

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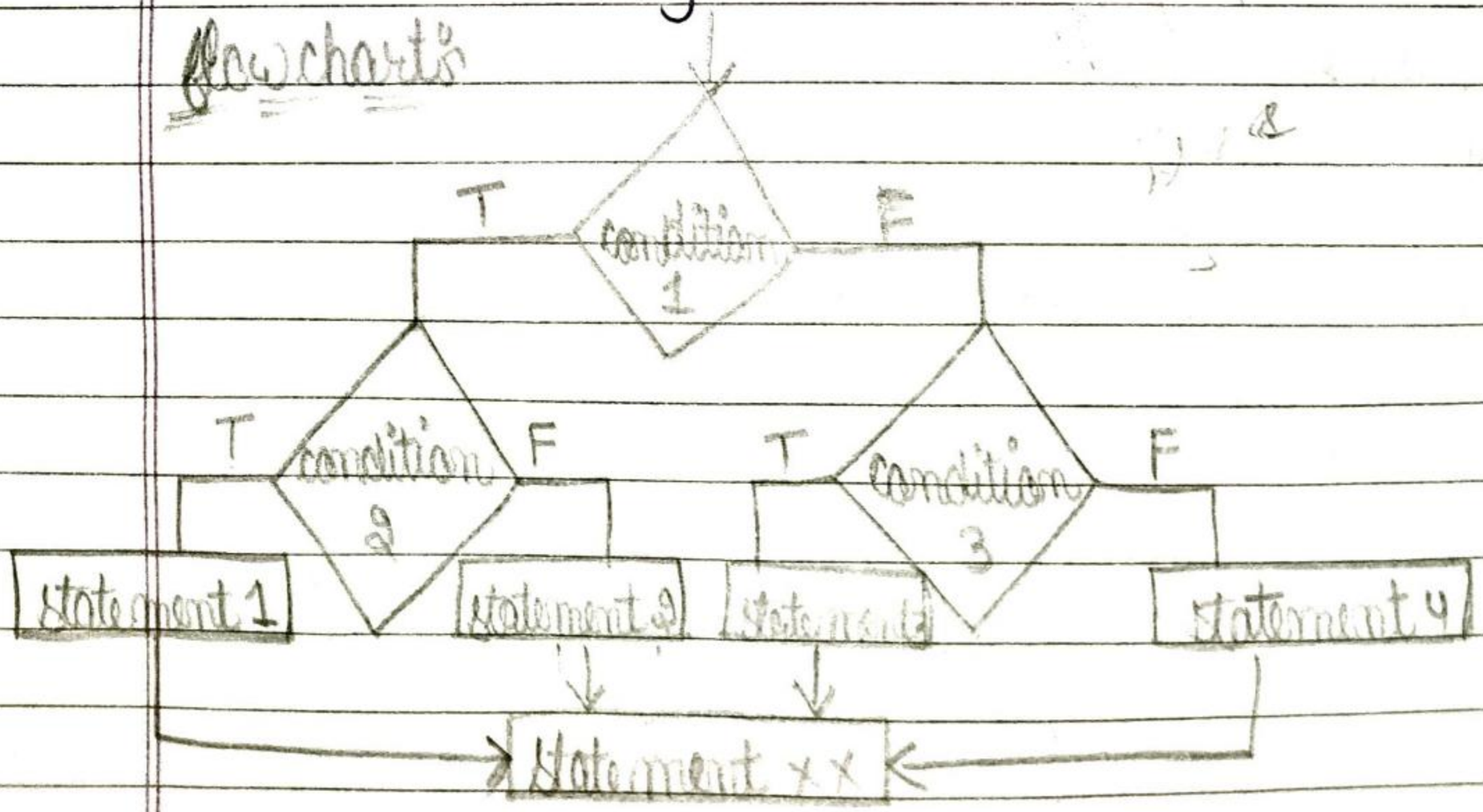
Syntax:

```
if (condition 1)
{
  if (condition 2)
  {
    statement 1;
  }
  else
  {
    statement 2;
  }
}
else
{
  if(condition 3)
  {
  }
  else
  {
    statement 4;
  }
}
```

flowcharts



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④ if else if statement is c also support for if else if construct.

This statement works with the conditions having multiple possible outcomes.

Then general form of else - if ladder is.

Syntax: if (condition1)

{

statement 1;

}

else if (condition2)

{

statement 2;

}

else if (condition 3)

{

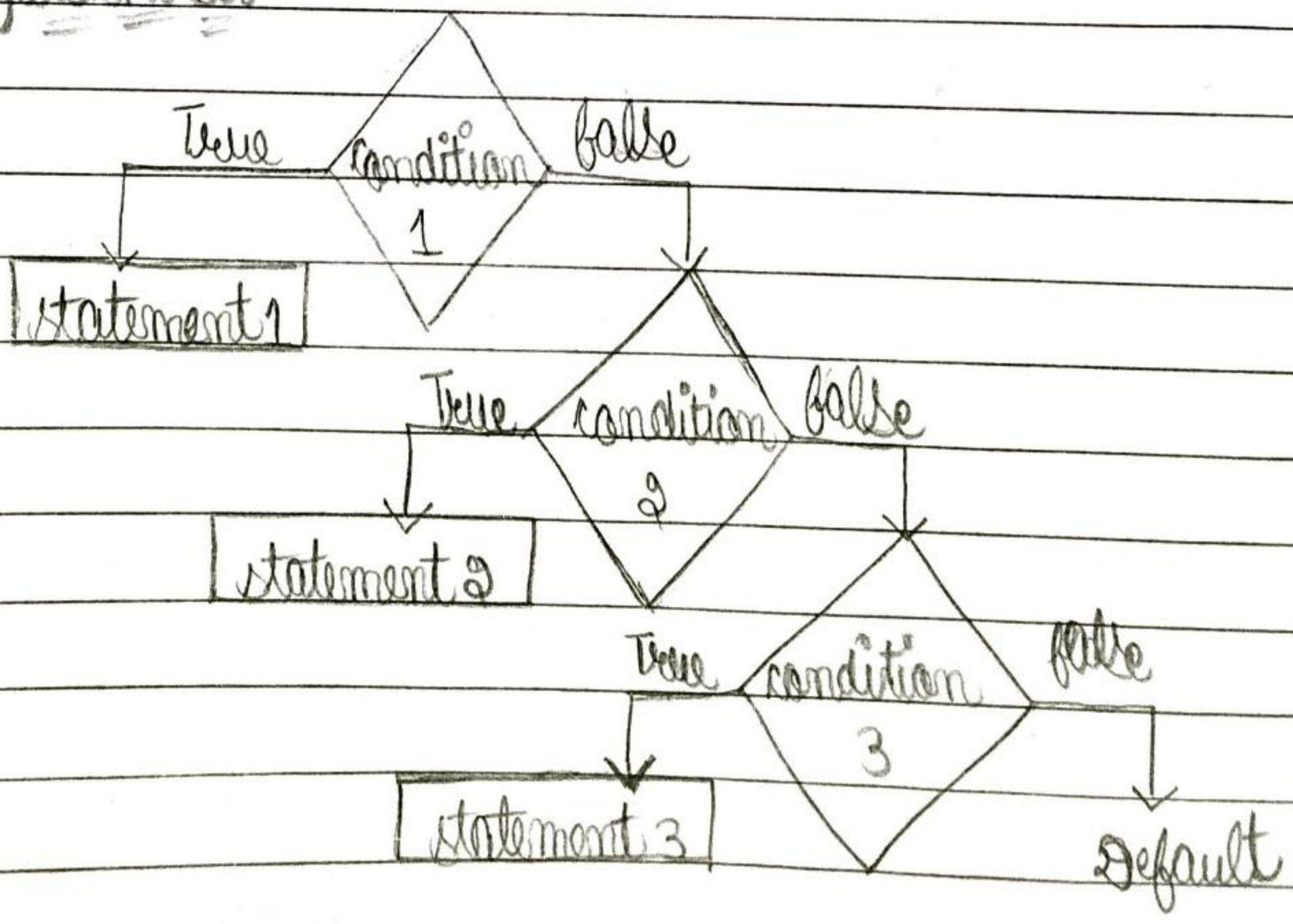
student 3;

}

else

default statement;

flowcharts



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Program 8:

```
# include <stdio.h>
# include <conio.h>
Void main()
{
clrscr();
int a;
printf("Enter the number");
scanf("%d", &a);
if(a%5==0 && a%8==0)
{
Printf("divisible by both 5 and 8");
}
else if(a%8==0)
{
Printf("divisible by 8");
}
else if(a%5==0)
{
printf("divisible by 5");
}
else
{
printf("divisible by none");
}
getch();
}
```

⑤ Switch statement :- when the number of conditions are large, it become too difficult to use if-else and Nested if.

when we have large number of condition we use switch case statement. The switch case statement can have many conditions.

It is a multi way desicion statement.

Syntax :- switch (Variable) or expression

```
{
case value 1 :
statement 1;
break;
case value 2;
statement 2;
break;
  .
  .
  .
default:
default statement;
}
```

Program :- Program to print day of month.

```
#include <stdio.h>
#include <conio.h>
void main ()
{
clrscr ();
int month;
printf ("\n Enter day in numbers 1 to 12");
scanf ("%d", &month);
```

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```
switch (month)
{
    case 1:
        printf ("\n jan");
        break;
    case 2:
        printf ("\n feb");
        break;
    case 3:
        printf ("\n Mar");
        break;
    case 4:
        printf ("\n Apr");
        break;
    case 5:
        printf ("\n May");
        break;
    case 6:
        printf ("\n June");
        break;
    case 7:
        printf ("\n July");
        break;
    case 8:
        printf ("\n Aug");
        break;
    case 9:
        printf ("\n Sep");
        break;
    case 10:
        printf ("\n oct");
        break;
```

```
case 11:
        printf ("\n sov");
        break;
case 12:
        printf ("\n dec");
        break;
default:
        printf ("\n wrong input");
}
getch ();
}
```

Flowchart :-