Operators

Subject: C Language Date: 22/12/2025

1. Arithmetic Instruction:

⇒ An instruction which is used to manipulate data using operators, is known as Arithmetic Instruction.

Example :— 3 + 4 → operator

operands

2. Classification of Operators :—

i) Unary operators +, −, ++, −−, sizeof()
ii) Arithmetic operators *, /, %, +, −
iii) Bitwise operators &, |, ^, ~, >>, <<
iv) Relational operators <, >, <=, >=, ==, !=
v) Logical Operators !, &&, ||
vi) Conditional operator ?:
vii) Assignment operator =, +=, −=, *=, /=, %=

3. Operator Precedence Table (High → Low)

⇒ Priority	Operators	Description
1	()	Parentheses
2	++ −−	Increment/Decrement
3	! sizeof	Unary operators
4	* / %	Arithmetic
5	+ −	Arithmetic
6	< <= > >=	Relational
7	== !=	Equality

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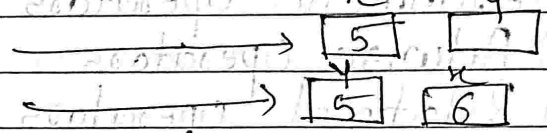
8	&&	Logical AND
9	||	Logical OR
10	?:	Conditional
11	= += -= *= %=	Assignment
12	,	Comma

NoTE:- Post increment ki priority sabse last me hoti hai.

Example:- Find output of the following program?

```
#include <stdio.h>
int main()
{
    int x=5, y;
    y=x++;
    printf("%d %d", x, y);
}
```

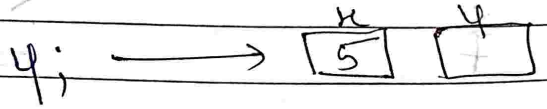


output:- 65

NoTE:- Pre increment ki priority hamesha jyada hota hai remaining operator se.

Example:- Find output of the following program?

```
#include <stdio.h>
int main()
{
    int x=5, y;
```



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```
y = ++x;        x: 6  y: 6
printf("%d %d", x, y);
}
```

output :- 66

Note :- Increment / Decrement operator hamesha variable ke uppar lagta hai.

4. Sizeof ( )

yaha pe hum :-
i) Data type
ii) Variable
iii) Constant
inhi teeno me se kisi ek ko likh sakte hai.

1. Example :- Data type

```
int x;
x = sizeof(float);
printf("%d", x);   // output - 4 bytes

x = sizeof(double);
printf("%d", x);   // output - 8 bytes

x = sizeof(char);
printf("%d", x);   // output - 1 bytes

x = sizeof(int);
Printf("%d", x);   // output - 4 bytes
```

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2. Example :— Variable

```
int x, y;
float m;
char ch;
double dl;

x = sizeof(dl); //output — 8 bytes
x = sizeof(ch); //output — 1 byte
x = sizeof(y); //output — 4 bytes
x = sizeof(m); //output — 4 bytes
```

3. Example :— Constant

```
int x;
x = sizeof(35); //output — 4 bytes
x = sizeof(4.7); //output — 8 bytes
x = sizeof('A'); //output — 4 bytes
```

Note :-
- Real Constants are by default of double type.
- Integer Constant is int.
- character Constant is int.
- Real Constant par kabhi modulus apply nahi hota.
  Example :— 3.5 % 2 (wrong)

- char x = 'A' / char x = 65 (Both same)
- int x = 65 / int x = 'A' (Both same)

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5. Some Important point.

i) Integer Constant / Integer Constant ⇒ Always give Integer Constant.
Example :- 5/2 = 2

ii) Integer Constant / Real Constant ⇒ Always give Real Constant.
Example :- 5/2.0 = 2.5

iii) x % y = 0 (It means ki x hamesha divisible hoga y se).

iv) x/5 = 3 (It means ki x hamesha divisible nahi hoga 5 se).

v) x/10 (It means ke value of x without last digit).

vi) x % 10 (It means ki last value of x).

vii) 3 % 4 (It means ki jab bhi aap small no. ko modulus karoge big no. se to hamesha small no. hi result me aayega).

viii) Agar Same priority ke operator ek se jyada lage ho same line me to hum hamesha usse left to right Solve karte hai.

Ex :- 5 > 4 > 3