1) Explain the features of c language :
* Efficient and fast-
* Powerful datatypes and libray.
*) Portable.
*) Platform dependent language.
*) modularity.
* Middle . level language.

2) Explain the various operaties in c

i) Arithmetic operator...

An Arithmetic operator performs mathematical operators such as addition, subtraction, multiplication, division etc.

eg: * , + ⟶ Arithmetic operator.

this operator used to add and multiply 2 or more operandes

If a = 2 ; b = 3 ; a+b = c

$$\boxed{c = 5}$$

a * b = c
2 * 3 = 3

$$\boxed{c = 6}$$

iii) *Assignment operator :-*

An assignment operator is used for assigning a value to a variable. The most common operator is $=$.

eg:

*) If $a = 5$; then $c = a$.
$$\therefore c = 5.$$

*) If $a = 10$; then $c += a$;
$$c = c + a$$
$$c = 5 + 10 \boxed{c = 15}$$

iv) *Relational operators :*

*) A relational operator checks the relationship between two operands. If the relation is true, it returns 1; if the relation is false, it returns value 0.

*) Relational operators are used in decision making and loops

eg.)

*) operator $\Rightarrow ==$

i meanings of operator is equal

$5 == 3$ is evaluated to 0.

(iv) Logical operators.

An expression containing logical operators returns either 0 or 1 depending upon whether expression result true or false.

eg)

→ && → logical AND. True only if all operands.

→ ! → logical NOT. they only if the operand is 0

For AND gate.

If c=5 and d=2 then condition (c==5) && (d>5) is equal to 0

For NOT gate.

If c=5 then condition !(c==5) equal too.

③ Write an algorithm and program to convert fahrenheit to celsius and celsius to fahrenheit

$$C = 5/9(F-32)$$

Step 3 : $c = \dfrac{5(f-32)}{9}$

Step 4 : print c

Step 5 : stop.

Program :-

```
# include
Void main()
{
    float celcius, fahrenheit.
    print f ("enter temperature in
             fahrenheit=");
        scanf ("%f" & fahrenheit);
    celsius = (fahrenheit = -3)* 4/9;
        print f ("%.2.f fahrenheit = %.2f
             celsius", fahrenheit, celsiy
    }
```

output :-

Enter temperature in Fahrenheit=
205.

205.00 fahrenheit = 96.11 celsius

ii) Celcius to fahrenheit.

Algorithm :-

Step 1 - start

Step 2 : Read c.

step 3: F = (((C*9)/5)+32

step 4: Print F

step 5: Stop

program:

```
# include <stdio.h>
void main ()
{ float celsius, fahrenheit;
   Print (" Enter the temperature in celsius");
   Scanf (" %f", & Celsius);
   fahrenheit = ((celsius *9)/5 )+32
   printf (" %2.f Celsius = % 2f fahrenheit",
                                      Celsius, fahrenheit);
   getch (0);
}
```

output:

Enter the temperature in celsius: 43

43:00 celsius = 109.40 fahrenheit

3) Write an algorithm and program to
convert kilometre to metre and metes to
kilometer.

i) Algorithm: (Km to m)

   Step 1: Start
   Step 2: Read the distance in kilometer
   Step 3: m = Km * 1000;
   Step 4: Print equivalent distance in
                                      meter

Step 5: Stop;

Program:
```
# include<stdio.h>
Void main
{   int km, m;
    printf ("Enter the distance in
kilometer..");
        scanf ("%d" & km);
        m=km*1000;
        printf("The equivalent distance
            meter is :%d ,m).
    }
```

output

    Enter distance in kilometer :15

    the equivalent distance in meter

                                is :15000

⑤ A program to convert decimal
to octal and print ASCII values
a character using format
Specifier

```c
# include <stdio.h>
int main()
{
    int number;
    Printf ("\n Decimal value is: ");
    Scanf ("%.d", & number);
    Printf ("\n octal value is = %.o",
                                number);
        return0;
    }
```

output:-

Decimal value is 2567
octal value is 5007

Program to convert decimal to hexadecimal

```c
# include <stdio.h>
Void main()
{
    int number;
    Printf (" Decimal value is:");
    Scanf ("%.d", & number);
    Printf ("\n Hexadecimal value is
        (Alphabet is small letter);
                %.x" , Number);
    Printf ("\n Hexadecimal value is
        (Alphabet is capital letter);
                %.x"; number);
```

output.

Decimal value is : 2567
Hexadecimal value is (Alphabet in small letters) : a07.
Hexodecimal value is (Alphabet in capital letters) : A07.

6) A program to find average of "n" number.

```c
# include <stdio.h>
void main()
{
    int n, count=1;
    float x, average, sum=0;
    Printf (" How many numbers that
                    you want to obtain?:");
    Scanf ("../.d ", &n);
    while (count < n)
    {
        Printf ("x = ");
        Scanf ("%f", &x);
        sum += x.
        ++ count;
    }
    average = sum/n;
    Printf "In the average is %d
```

output:

How many numbers that you want to enter? :

X = 1
X = 2
X = 3
X = 4

the average is 2.000000.